JAMAICA

ANNUAL REPORT

OF THE

Medical Department.

FOR THE

YEAR ENDED 31ST DECEMBER, 1936.

Ordered by His Excellency the Governor to be Printed.

JAMAICA
GOVERNMENT PRINTING OFFICE, KINGSTON.

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MEDICAL DEPARTMENT.

Report for the year ended 31st December, 1936.

PART I.

I.—ADMINISTRATION.

A. Personnel.

1. Director of Medical Services.
2. Assistant Director of Medical Services.
3. Clerical Staff.

B. Organization

1. *Medical*—
    - (a) *Special Institutions*:
        - (1) Kingston Public Hospital.
        - (2) Jubilee Maternity Hospital.
        - (3) Lunatic Asylum.
        - (4) Lepers' Home.
        - (5) Tuberculosis Hospital.
    - (b) *Provincial Medical Service*:
        - (1) 43 Medical Districts—
            - 19 with hospitals.
            - 24 without hospitals.
        - (2) 64 Dispensaries, and a varying number of Out-stations.
    - (c) *Staff*:
        - 1 Senior Medical Officer, Kingston Public Hospital
        - 2 Resident Medical Officers do.
        - 5 Medical Officers do.
        - 2 Casualty Officers do.
        - 1 Radiologist do.
        - 1 Dental Surgeon (part-time) do.
        - 1 Medical Superintendent, Lunatic Asylum
        - 2 Senior Medical Officers do.
        - 2 Medical Officers do.
        - 1 Resident Medical Officer, Jubilee Maternity Hospital
        - 43 Medical Officers in districts
        - 6 Supernumerary Medical Officers
        - Matrons, Nurses and Probationers, Dispensers in Hospitals and Asylums.
        - Clerical and Subordinate Staffs.

2. *Public Health*—
    - (a) *Divisions:*
        - (1) Laboratory, Bacteriological and Pathological.
        - (2) Communicable Disease Control:
            - (a) Yaws Commission.
            - (b) Mobile Units (Miscellaneous)
            - (c) Tuberculosis Dispensary and Clinic.
            - (d) Venereal Diseases Clinics.
            - (e) Quarantine Service
            - (f) Malaria Control.
    - (b) *Staff:*
        - (1) 1 Assistant Director of Medical Services (Health).
        - (2) 1 Bacteriologist and Pathologist.
        - (3) 1 Assistant do. do.
        - (4) 17 Medical Officers (Health)
        - (5) 1 Port Medical Officer.
        - (6) 35 Sanitary Inspectors.
        - (7) X-ray Assistants, Field workers, Laboratory Assistants.
        - (8) Clerical and Subordinate Staffs.

C.—New Appointments, Transfers, etc.

New Appointments—
Dr. L. E. Arnold, Assistant Bacteriologist and Pathologist.
Dr. R. A. S. Cory, Health Officer, Tuberculosis Dispensary.
Dr. H. H. Brown
Dr. A. L. D. Carnegie
Dr. G. W. Finzi
Dr. M. S. Hendricks
Dr. C. B. Phillips } Supernumerary Medical Officers
Dr. O. C. L. Pitter
Dr. K. C. Royes
Dr. J. F. B. Sanguinetti
Dr. C. H. Tomlinson
Dr. E. D. Gideon, Temporary Medical Officer, Tuberculosis Dispensary.
Dr. D. K. Weston, Temporary Medical Officer, Public Hospital, Kingston
Dr. W. A. S. Browne, Casualty Officer, Public Hospital, Kingston
Dr. E. E. Murray, Casualty Officer, Public Hospital, Kingston
Dr. H. H. Blair, Medical Officer, Spanish Town.
Dr. T. A. Dryden, Medical Officer, Highgate (Acting).
Dr. L. J. Lannaman, Medical Officer, Mandeville (Acting).
Dr. A. E. Owen-Tomlinson, Medical Officer, St. Ann's Bay (Acting).
Dr. J. I. Rerrie, Health Officer, Yaws Commission, Trinity Ville.
Mr. E. M. Mair, Supernumerary Dispenser, Spanish Town.
Mr. C. A. Robinson, Dispenser, Public Hospital, Kingston.
Mr. K. Taylor, Dispenser, Sav.-la-Mar.
Mr. S. M. Edwards, Medical Storekeeper, Medical Department (Acting).
Miss E. Gordon, Matron, Chapelton.
Miss O. C. Reuben, Matron, Falmouth.
Miss L. McGregor, Assistant Matron, Jubilee Maternity Hospital.
Miss I. Holtz, Second Class Clerk, Medical Department.

Transfers—
Dr. F. W. Aird, from Supernumerary Medical Officer to Medical Officer, Duncans.
Dr. H. H. Brown, from Acting Medical Officer to Supernumerary Medical Officer, Public Hospital, Kingston.
Dr. G. S. Escoffery, from Medical Officer of Health, St. Catherine, to Medical Officer of Health, Clarendon.
Dr. L. St. C. Ferguson, from Resident Medical Officer, Public Hospital, Kingston, to Medical Officer, Port Antonio.
Dr. M. S. Golding, from Resident Medical Officer, Public Hospital, Kingston, to Medical Officer, Buff Bay.
Dr. S. C. Grant, from District Medical Officer, Stony Hill, to Medical Officer, Ulster Spring.
Dr. E. S. Greaves, from District Medical Officer, Adelphi, to Medical Officer, Stony Hill.
Dr. C. G. Binns, from Acting Health Officer, Port Royal, to Medical Officer, Linstead.
Dr. H. M. Johnston, from Assistant Medical Officer of Health, Kingston & St. Andrew, to Medical Officer of Health, St. Catherine.
Dr. M. M. Lopez, from District Medical Officer, Linstead (Acting) to Medical Officer, Hordley, (Acting).
Dr. E. V. W. Mellad, from Visiting Surgeon Jubilee Hospital, to Medical Officer, Crofts Hill.
Dr. H. L. Morrison, from Resident Medical Officer, Public Hospital, Kingston, to Medical Officer, Montego Bay.
Dr. J. N. McIntosh, from Medical Officer of Health, St. Elizabeth, to Secretary Quarantine Board.
Dr. D. H. McPhail, from Medical Officer of Health, Clarendon, to Medical Officer of Health, St. Elizabeth.
Dr. J. M. Stockhausen, from Resident Medical Officer, Public Hospital, Kingston, to Resident Medical Officer, Jubilee Hospital, Kingston.

Dr. C. E. Vaz, from District Medical Officer, Buff Bay, to Medical Officer, Falmouth.
Mr. S. B. Salmon, from Dispenser, Stony Hill, to Dispenser, Hordley.
Mr. J. Anderson, from Dispenser, Hordley, to Dispenser, Stony Hill.
Mr. A. V. Bryan, from Dispenser, Port Antonio, to Dispenser, St. Ann's Bay.
Mr. S. E. Anderson, from Dispenser, St. Ann's Bay, to Dispenser, Port Antonio.
Mr. C. E. Cole, from Second Assistant Medical Storekeeper, to Dispenser, Black River.
Miss A. H. Bennett, from Matron, Hordley, to Matron, Port Antonio.
Miss L. M. Robotham, from Matron, Port Antonio, to Matron, Hordley.
Miss A. L. Levy, from Matron, Chapelton, to Matron, Lucea.

Resignations—
Dr. L. M. Clark, Resident Medical Officer, Public Hospital, Kingston.

Retirements—
Dr. A. A. Anderson, District Medical Officer, Spanish Town.
Dr. A. T. Clarke, District Medical Officer, Old Harbour (Acting).
Dr. A. G. Curphey, District Medical Officer, St. Ann's Bay.
Dr. A. E. C. Myers, Medical Officer, Public Hospital, Kingston.
Dr. C. E. Riddell, Medical Officer, Crofts Hill.
Dr. F. A. Ritchie, Medical Officer, Richmond.
Dr. R. G. Sherlock, Medical Officer, Mandeville.
Dr. R. F. C. Cooper, Medical Officer, Manchioneal.
Mr. Charles Don, Medical Storekeeper and Secretary Quarantine Board.
Miss L. Bird, Matron, Public General Hospital, Falmouth.
Mr. M. J. Thomas, Dispenser, Public Hospital, Kingston.

Promotions—
Dr. L. L. Freeman, from Supernumerary Medical Officer, to Medical Officer, Public Hospital, Kingston.
Dr. G. V. Harry, from Supernumerary Medical Officer, to Medical Officer, Public Hospital, Kingston.
Dr. H. L. Henriques, from Supernumerary Medical Officer, to Medical Officer, Public Hospital, Kingston.
Dr. P. C. Murray, from Supernumerary Medical Officer, Public Hospital, to Medical Officer acting as Health Officer, Port Royal.
Dr. I. S. Lloyd, from Supernumerary Medical Officer, Public Hospital, Kingston, to Medical Officer, Claremont.
Dr. H. D. Chambers, from Medical Officer Hookworm Commission, to Medical Officer in charge of Yaws Treatment Unit.
Dr. J. I. Rerrie, from Medical Officer Hookworm Commission, to Medical Officer of Health—temporarily in charge of Yaws Treatment Unit.
Dr. T. B. Sinclair, from Medical Officer, Hookworm Commission, to Medical Officer acting as Medical Officer of Health, Clarendon.
Mr. S. F. Hearne, from Second Class Clerk, General Penitentiary, to First Class Clerk, Medical Department.
Miss E. McNeil Smith, from Assistant Matron to Matron Jubilee Maternity Hospital.

Deaths—
Dr. H. M. Embden, District Medical Officer, Duncans.

In addition:
The services of Dr. R. L. Chamberlain, District Medical Officer, Lower St. Andrew and Dr. A. A. Myers, District Medical Officer, Hagley Gap (Acting), were terminated.
Dr. S. Ferriera, Medical Officer, Yaws Commission, and Mr. W. A. King, Senior Laboratory Assistant, Government Laboratory, Kingston, were awarded Fellowships by the Rockefeller Foundation to the United States of America.

(D) FINANCIAL.

Expenditure:

	£	s.	d.
Head XXI. Medical—General Administration—			
Personal Emoluments	25,279	16	7
Other Charges	4,454	5	6
Head XXI. Part II Medical—Health Service—			
Personal Emoluments	22,552	15	9
Other Charges	16,281	16	0
Head XXII. Medical—Hospitals and Lepers' Home—			
Personal Emoluments	40,514	17	6
Other Charges	46,613	11	9
Head XXIII. Lunatic Asylum—			
Personal Emoluments	22,848	1	10
Other Charges	20,792	14	10
Total Expenditure	199,337	19	9
Total Expenditure of the whole Colony	£2,178,228	3	0½
Percentage of Expenditure on Medical Department	9%		
Revenue from Fees, etc.	9,820	17	0

II.—PUBLIC HEALTH AND GENERAL REMARKS.

General Health.

The health of the Island was satisfactory during 1936. There was a slight decrease in the death rate from 17.7 in 1935 to 17.4.

In the early months of the year there were two water-borne epidemics—one of Typhoid at Chapelton in the parish of Clarendon with 64 cases and 6 deaths, and one of Dysentery at Yallahs, in the parish of St. Thomas with 70 cases and 1 death.

Prolonged spring rains caused some increase of Malaria in the summer, particularly in the corporate area of Kingston and St. Andrew and to a less extent, in parts of the parishes of St. Elizabeth and Manchester.

The Yaws Control programme instituted in 1933, is causing a steady reduction in the number of active and infectious cases.

2. The Medical Service was re-organised in 1936, and is now working well and without difficulties.

The work of the District Medical Officers has increased considerably with the extension of the Outdoor Dispensary Ticket system which is now well established throughout the island. This is shown by a slight decrease of outpatients treated in Hospitals and by a very considerable increase of patients treated in District Dispensaries from 59,327 attendances in 1935 to 204,527 attendances in 1936.

3. Considerable progress has been made during the year in regularising the conditions of service of hospital nurses. By the end of the year probationer nurses had been removed from all district hospitals and substituted by a fixed cadre of nurses (1 to 8 patients) and wardmaids (1 to 20 patients). Training of nurses is now carried out only at the Kingston Public Hospital where excellent facilities exist for a thorough training in all branches of nursing. The course of training is three years.

State Registration of General Nurses does not yet exist in the Island but a considerable advance in this direction has been made in the Registration of Nursing Homes, Law 9 of 1934, which requires that Nursing Homes shall have a required number of Certificated Nurses and Midwives in charge of the patients.

4. Public Health Work.

The Public Health Department has now been re-organised on a permanent basis by the establishment of a cadre of 17 Health Officers and 35 Sanitary Inspectors working under the direct control of the Assistant Director of Medical Services (Health). This reorganisation provides Health Officers for all parishes in the country and absorbs many of the doctors and personnel of the Commissions of Malaria, Hookworm, Yaws and Tuberculosis established by the Rockefeller Foundation and run in co-operation with the Jamaica Government. The Quarantine Department was also re-organised with increased personnel and included in the Public Health Department.

5. Central Laboratory.

The work of the Laboratory has still further increased from 39,566 specimens examined in 1935 to 57,950 specimens in 1936. Detailed information will be found in Section VII.

The Laboratory now supplies an adequate and efficient public health Laboratory service for the whole island though improvement is still desirable on the lines of a branch laboratory for the western end of the Island and facilities in the Central Laboratory for chemical analysis of foods for public health requirements.

6. Venereal Disease Clinics.

The Island was visited in April by Mrs. Neville Rolfe, Secretary General of the British Empire Social Hygiene Council, who examined the problems of Venereal Disease and submitted a valuable and comprehensive report with recommendations for a scheme of Venereal Disease treatment centres and improved facilities for treatment throughout the Island.

A modification of this scheme has been accepted by the Government for adoption in 1937. This scheme provides special V. D. Clinics and Treatment Centres for Kingston, Montego Bay, Port Antonio and Spanish Town and improved treatment facilities in all hospitals. In anticipation of the scheme a Men's V. D. Treatment Centre was opened in Kingston in October of this year in addition to the Women's Clinic which has been working in Kingston since October of 1935.

7. Housing.

The Central Housing Advisory Board completed its enquiries during the year and has submitted a scheme for Town Planning and improvement of slum areas under a Central Housing Authority, which has been accepted by the Government.

8. General Remarks.

The following table shows the comparison of the more important groups of diseases of in-patients in the Hospitals during 1935 and 1936.

Diseases.	1935. Cases.	1935. Deaths.	1936. Cases.	1936. Deaths.
Diseases of the—				
Nervous System	849	93	624	89
Eye	616	..	648	..
Circulatory System	1,141	132	1,040	192
Respiratory System	2,009	303	1,568	245
Digestive System	4,070	226	4,374	242
Genito Urinary System (Non-venereal)	4,435	261	3,748	248
External Causes	4,114	91	4,861	59

Communicable Diseases: These are dealt with in detail by the Assistant Director of Medical Services (Health) in the following section on Sanitation.

T. J. Hallinan,
Director of Medical Services.

III.—SANITATION.

1. Administration.

(a) *Personnel.*—Dr. T. B. Sinclair, Medical Officer, Hookworm Commission, appointed Medical Officer, acting as Medical Officer of Health Clarendon.

Dr. G. S. Escoffery transferred from Medical Officer of Health St. Catherine to Medical Officer of Health, Clarendon.

Dr. H. M. Johnston transferred from Assistant Medical Officer of Health Kingston and St. Andrew to Medical Officer of Health St. Catherine.

Dr. D. H. McPhail transferred from Medical Officer of Health Clarendon to Medical Officer of Health St. Elizabeth.

Dr. S. Ferriera, Medical Officer Yaws Commission, and Mr. W. A. King, Senior Laboratory Assistant, Government Laboratory, Kingston, were granted Fellowships by the Rockefeller Foundation. Dr. Ferriera to take a course in Public Health work and Mr. King a course in Bacteriology.

The attendances of Members of the Central Board of Health at its 3 meetings were:—

Major T. J. Hallinan, C.B.E., Chairman	3
Dr. E. D. Gideon	3
Dr E. E. Penso	2
Dr. S. Lockett	3
Mr. N. W. Manley	—
Mr. N. Roots	2

The Senior Sanitary Medical Officer was present on 3 occasions.

1. *Parochial Staff.*—Table 1 shows the Staff employed by the Local Boards of Health.

Table I.

Parish.	Health Officers.		Sanitary Inspector.				Nurses.		Clerks.	Dental Surgeon.	Others	Vet.
	Whole-time.	Part-time.	Chief.	Whole-time.	Part-time.	Specially for Latrine Construction.	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.
Kingston ..	1	..	1 (1)	14 (12)	..	..	1	3	2	1	3	1
St. Andrew ..	1	..	1 (1)	14 (9)	..	..	1	8	1	1	2	1
St. Thomas ..	..	1	1 (1)	5 (3)	..	..	..	5	1	..	..	..
Portland ..	1	..	..	5 (3)	..	..	..	2	1	1	3	..
St. Mary ..	1	..	1 (1)	8 (3)	..	..	..	5	2 (1)	..	1	..
St. Ann ..	1	..	..	9 (4)	..	..	..	2	1 (1)	..	..	..
Trelawny ..	1	..	..	4 (3)	..	..	..	4	1	..	1	..
St. James ..	1	..	1 (1)	7 (3)	..	..	..	4	..	..	..	..
Hanover ..	1	..	..	4 (4)	..	..	..	4	1	..	1	..
Westmoreland ..	1	..	1 (1)	1 (1)	5 (3)	..	..	4	1	..	2	..
St. Elizabeth ..	1	..	1 (1)	4 (2)	..	..	..	4	..	..	..	..
Manchester ..	1	..	1 (1)	5 (2)	..	..	..	6	1	..	..	..
Clarendon ..	1	..	1 (1)	8	..	..	..	1	1	..	..	..
St. Catherine ..	1	..	1	5 (5)	5 (3)	..	1	1	2	1	..	..
Port Royal ..	..	1	..	..	1	..	..	..	..	..	..	..

2. *Staff of Central Board of Health.*—Table II shews the Staff employed by the Central Board of Health.

Table II.

	Medical Officers.	Senior Sanitary Inspectors.	Clerk.	Microscopists and Technicians.	Sanitary Inspectors.	Nurses.	Dispensers.
Mobile Health Units ..	2	3 (3)	1	2	10 (3)	..	..
Malaria	1	..	1	1	7 (5)	..	..
Tuberculosis ..	2	..	2	1	..	4	..
Yaws	2	..	3	2	10 (6)	..	2
Quarantine Board ..	1	..	1	..	1 (1)	..	..

Note.—This Rockefeller Foundation provides a Central Laboratory with Staff and equipment for the Yaws Commission, 3 Specialists for work on Yaws and Tuberculosis, and 6 Sanitary Inspectors for Yaws work.

3. *School Dental Clinics.*—The following parishes maintained School Dental Clinics in Kingston and St. Andrew, Portland, St. Mary, Trelawny, St. James, Hanover, Clarendon and St. Catherine.

The Central Board of Health contributed 25% of the cost in the parishes of Portland, Trelawny, St. James, Hanover, Clarendon and St. Catherine.

(b) *Finance.*—Table III shews the expenditure of the various parishes for Public Health.

Table III.

Administration.	Kingston & St. Andrew.	St. Thomas.	Portland.	St. Mary.	St. Ann.	Trelawny.	St. James.	Hanover.	Westmoreland.	St. Elizabeth.	Manchester.	Clarendon.	St. Catherine.	Port Royal.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£
H. O. Salaries‡	800	300	750	729	625	700*	..	..	†800	800	675	800	700	600
T. A. ‡	150	100	150	175	150	200*	..	..	†200	150	150	150	150	..
S. I. Salaries	..	837	573	1,284	1,005	600	1,004	262	605	464	668	1,000	1,138	..
T. A.	..	..	56	280	194	150	241	65	169	153	219	150	512	52
Clerks	..	78	120	216	130	130	78	52	75	..	35	84	166	..
Messengers, etc.	..	..	21	26	30	18	..	14	..	2	..	12	30	..
Total I ..	..	1,315	1,670	2,710	2,134	1,798	1,323	393	1,849	1,569	1,747	2,196	2,696	652
2. Cleansing	..	544	881	2,053	681	318	1,300	265	505	217	255	344	1,500	71
3. I. D. Prevention	..	7	130	70	57	..	126	22	14	11	4	15	147	6
4. Cemeteries	..	75	151	210	93	68	..	31	103	24	75	8	147	10
5. Child Welfare	..	170	48	183	120	67	355	143	111	125	400	25	443	..
6. Conservancy	..	..	..	115	8	..	47	3	..	4	71	117	..	112
7. Drainage	..	122	338	143	220	..	568	5	100	2	..	..	371	..
8. Water Supply	..	376	554	410	250	15	169	251	2,033	30	193	..	1,005	86
9. Miscellaneous	..	165	52	975	245	31	318	454	40	24	252	80	300	..
Total II ..	..	1,459	2,154	4,159	1,673	499	2,883	1,174	2,906	437	1,250	589	3,913	285
Grand Total ..	..	2,774	3,824	6,869	3,807	2,297	4,206	1,567	4,755	2,006	2,997	2,785	6,609	937

‡ Salaries and Travelling Allowances of Medical Officers of Health paid by Central Government.
* One M.O.H. does parishes of Trelawny and St. James.
† One M.O.H. does parishes of Hanover and Westmoreland.

The Central Government spent the following amounts on matters affecting the Public Health:—

Quarantine Branch	£222 9 5
Tuberculosis Branch	1,481 0 9
Bacteriological Branch	3,005 9 11
Epidemic Measures	2,714 13 8
Health Propaganda	861 9 0
Schools Dental Clinic	386 17 0
Vaccination Fees	879 6 9
Drugs	3,897 6 0
Training School for Sanitary Inspectors	27 3 3
V. D. Clinic	1,980 5 7
Treatment of Tuberculosis	1,737 19 2
Child Welfare Association	1,000 0 0
	£18,194 0 6

The Rockefeller Foundation spent £4,361 15s. 9d. as follows:—

Central Office		£310 12 2
Tuberculosis—Special Studies	£463 13 9	
Rural Isolation Studies	404 9 4	
Mental Hospital Studies	261 12 3	1,129 15 4
Water Improvement and Sanitation		22 7 2
Yaws Commission		2,836 0 1
Fellowship Expenditure of—		
Dr. S. Ferriera		25 14 1
Mr. W. A. King		37 6 11
		£4,361 15 9

This does not include the salaries of the Director for Jamaica and three other Specialists on the Local Staff of the Foundation.

(c) *Legal.*—The following Laws affecting Public Health were enacted in 1936:—

No. 18—A Law to authorise the use of certain Abandoned Cemeteries in Kingston for Municipal purposes.

No. 34—Water Commission Corporate Area Law 1936.

No. 37—A Law to enable Parochial Boards to make Regulations for certain purposes.

The following Notice affecting Public Health was published in the Jamaica Gazette:—

No. 480—By-Laws for the Control and Government of the Ocho Rios Water Works.

VITAL STATISTICS.

Population.—The estimated population 31st December, 1936, was 1,138,558 distributed by parishes as shewn in Table V.

Birth Rate.—36,561 births were registered, giving a rate of 32.35 per 1,000 population. 71.66% of the births were illegitimate.

Death Rate.—The crude death rate fell from 17.7 in 1935 to 17.4 in 1936.

Infant Mortality.—The Island death rates under 1 year and under 5 years were respectively 130 and 183 per 1,000 live births as compared with 137 and 186 in 1935.

The percentage of total deaths registered with medical certificates continues to improve as shewn by the following Table.

Table IV.—Medical Certification of Deaths.

Year.	Total Deaths.	Percent. Medically Certified.
1931	19,377	32.9
1932	18,265	35.8
1933	20,969	37.2
1934	18,731	39.4
1935	19,706	41.2
1936	19,629	42.6

Table V.

1936.	Estimated Population on 31st Dec., 1936.	Pulmonary Tuberculosis.	Typhoid Fever.	Malaria Fever.	Black Water Fever.	Undefined Fever.	Diarrhoea and Enteritis.	Chronic Nephritis.	Cancer and other Malignant Tumours.	Infantile Convulsions (under 5 years of age)	Congenital Debility.	Pneumonia.	Other ill-defined and unspecified Causes.	All other Causes.	Total Deaths.	Death Rate.
Kingston ..	76,986	124	57	78	1	26	62	97	59	7	90	120	14	1,067	1,802	23.56
Port Royal ..	1,107	..	..	..	..	..	..	..	..	..	..	2	..	7	9	8.14
St. Andrew ..	62,186	258	5	42	1	98	71	40	30	93	192	55	79	794	1,758	28.37
St. Thomas ..	50,753	53	24	49	1	129	45	55	13	121	44	36	78	441	1,089	21.48
Portland	60,895	39	27	23	..	170	8	42	11	14	136	24	76	422	992	16.36
St. Mary	89,573	61	25	62	..	240	56	78	29	69	115	34	80	633	1,482	16.65
St. Ann	95,302	96	23	32	..	106	34	39	22	86	82	44	90	583	1,237	13.11
Trelawny	44,508	30	4	19	..	71	33	39	15	70	89	23	38	349	780	17.69
St. James	54,911	63	33	26	..	173	29	73	16	109	94	77	77	474	1,244	22.88
Hanover	49,734	34	5	17	..	104	40	31	16	150	41	41	34	433	946	19.14
Westmoreland ..	88,470	43	8	72	1	188	20	39	39	127	152	56	55	609	1,409	16.54
St. Elizabeth ..	104,547	53	15	56	1	201	34	60	20	279	111	35	94	697	1,656	15.94
Manchester ..	85,044	51	3	17	..	77	18	42	15	74	105	47	61	588	1,098	13.04
Clarendon	109,998	76	28	70	..	287	49	71	30	170	132	50	193	703	1,859	17.38
St. Catherine ..	19,120	102	31	109	..	373	48	64	23	128	185	56	197	952	2,268	19.12
	1,093,134															
Add excess Arrivals over Departures from Census Day 1921 to 31.12.36 ..	45,424															
Whole Island ..	1,138,558	1,083	288	672	5	2,243	547	770	338	1,497	1,568	700	1,166	8,752	19,629	17.37
Medically Certified ..		872	277	610	5	19	368	504	306	13	142	615	15	4,620	8,366	.

COMMUNICABLE AND INFECTIOUS DISEASES.

Table VI shews the notification of cases of Infectious Diseases for the year, by Months and by Parishes.

Table VI.

	Typhoid.	Para Typhoid.	Dysentery.	Pulmonary Tuberculosis.	Leprosy.	Chicken Pox.	Diphtheria.	Scarlet Fever.	Erysipelas.	Cerebro-Spinal Meningitis.	Poliomyelitis.	Puerperal Fever.
By Months—												
January ..	153	1	15	103	2	25	1	2	1	..	..	1
February ..	162	..	20	138	8	38	..	..	..	5	1	..
March ..	135	..	21	134	6	58	..	1	3	3	..	3
April ..	101	..	15	125	2	23	..	2	..	..	1	2
May ..	92	..	18	120	6	5	1	1	..	..	..	3
June ..	80	..	21	124	5	12	..	..	2	..	1	3
July ..	124	..	118	121	..	5	1	1	2	..	..	1
August ..	137	..	28	111	3	20	2	4	1	3	2	2
September ..	112	..	11	113	5	4	..	2	3	2	1	1
October ..	88	..	9	135	3	19	3	1	3	1	..	1
November ..	51	..	22	124	2	17	4	..	3	1	1	..
December ..	42	..	21	106	3	5	3	1	..	..	..	1
Total ..	1,277	1	319	1,453	45	231	15	15	18	15	7	18
By Parishes—												
Kingston ..	199	..	153	465	8	20	5	7	2	2	1	3
St. Andrew ..	137	1	19	165	1	11	5	3	3	1	..	1
St. Thomas ..	74	..	74	47	..	8	..	..	..	2	..	2
Portland ..	70	..	2	36	..	9	..	1	1	..	..	2
St. Mary ..	145	..	2	81	..	30	2	..	4	..	..	1
St. Ann ..	56	..	7	109	3	7	1	..	4	1	..	2
Trelawny ..	23	..	7	31	6	4	..	2	1	2	1	1
St. James ..	115	..	8	74	1	19	..	..	1	..	2	1
Hanover ..	34	..	1	29	..	11	.	..	..	..	1	2
Westmoreland	43	..	4	48	2	24	1	..	..	2	..	1.
St. Elizabeth	60	..	..	52	5	63	..	1	1	..	..	1
Manchester	22	..	7	54	2	5	..	..	..	..	..	..
Clarendon ..	188	..	14	89	6	16	1	1	1	2	2	1
St. Catherine	110	..	21	173	11	4	..	..	..	3	..	..
Port Royal ..	1	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,277	1	319	,1453	45	231	15	15	18	15	7	18

Enteric Fevers.—1,277 cases and 288 deaths were recorded as compared with an average annual number of 1,155 cases and 268 deaths for the 5 year period ended December, 1936 (1932-36). The parishes of Clarendon, St. Mary, St. Thomas, St. James and Portland showed a significant increase over the previous year, while there was marked decrease in Kingston, Trelawny and Manchester.

The incidence of the disease shows these fluctuations from year to year in all parishes. The only parishes which give some indication of a downward trend over the past 5 years are the Corporate area of Kingston and St. Andrew, St. Catherine and Westmoreland. In the Corporate area of Kingston and St. Andrew, the decline is associated with the improvements in purification of the water supply begun in 1930. Approximately 5/6 of the population of the Corporate area are now provided from the purified public supply. During the two years 1931 and 1932 there has been a reduction of over 25% in the endemic typhoid rate, and since 1932, there has been a slow downward tendency in the deaths from typhoid, with a pleasing absence of marked upward fluctuations in any year such as used to occur prior to 1930. 1927 for example was an epidemic year with 154 deaths, whereas the deaths recorded from Typhoid in this area since 1932 have been as follows:—

Table VII.—Deaths, Enteric Fevers (Corporate Area).

1932	..	..	..	..	66
1933	..	..	..	..	77
1934	..	..	..	..	85
1935	..	..	..	..	67
1936	..	..	..	..	57

Bearing in mind the increasing population, there is ground for the belief that the incidence of Typhoid in this area is gradually declining. It appears, however, that the maximum effect obtainable by purification of the water supply has now been obtained, and other factors in the transmission of Typhoid must be more vigorously dealt with, the outstanding requirement being extension of the sewerage system.

Difficulties in diagnosis of typhoid were experienced particularly in the Corporate area due to the high incidence of severe clinical types of Malaria in 1936 as was the case in 1934, and many cases reported as Typhoid proved on further investigation to be Malaria.

In St. Catherine two large groups of population centred in and around Spanish Town and Linstead are now provided with purified water, the latter supply having been installed in 1933. It might be noted here that chlorination of the Montego Bay supply was begun in the latter part of 1936, and although this is not yet as efficient as it should be, the number of cases in the town during the last quarter of 1936 was less than half the number in the corresponding periods of the previous two years.

An explosive water borne epidemic occurred in February in the town of Chapelton with a population of about 1,200 people.

From January 31st to February 20th, 57 persons were infected in the immediate vicinity, while 14 other cases in the parish and at least one in Kingston were associated with the outbreak. Six of the first 57 and 2 others died. There were 62 primary cases, in 60 of which the dates of onset were ascertained to be as follows:—

	Cases.		Cases.		Cases.
January 31st ..	1	February 7th ..	7	February 14th ..	1
February 1st ..	2	February 8th ..	3	February 15th ..	..
February 2nd ..	3	February 9th ..	5	February 16th ..	4
February 3rd ..	1	February 10th ..	7	February 17th ..	3
February 4th ..	2	February 11th ..	3	February 18th ..	2
February 5th ..	7	February 12th ..	..	February 19th ..	3
February 6th ..	3	February 13th ..	1	February 20th ..	2

The grouping on onsets, the distribution of the cases in the town, and the absence of suggestion of any other common cause made it certain that the cause was a temporary pollution of the water supply during the latter part of January and quite possibly to a single pollution of short duration. This view is supported by the following facts. The Head works of the Chapelton supply consists of a spring dammed into a small open basin surrounded by rising well cultivated ground and the arrangements for exclusion of surface washings from this ground or of mischievous pollution were insufficient, moreover, there is reported to be direct underground communication between the spring and the Alexandria ponds situated about one mile away at a higher level, and the water main is known to have leaky joints and passes through sullage gullies and near pit latrines. No means of purification is provided and it is exceptional for the people of the town to boil their drinking water. The Alexandria ponds are unprotected and subject to gross pollution and 3 persons are known to have died in their vicinity on January 18, 19 and 20 from symptoms highly suggestive of Typhoid Fever.

Three inches of rain fell one day in the latter part of January after a period of dry weather, and this may have introduced the infection, though, from the condition found at the headworks, it was also possible for a mischievous or ignorant person to pollute the basin directly.

There were 10 secondary or contact cases as follows:—May Pen 4, Ashley 3, Chapelton 1, Pond Top 1, and Kingston 1. The onset of the disease in these cases occurred between February 25th to April 9th. These cases are considered to have been infected by one or other of the primary cases—in the May Pen cases, for example, four children contracted the disease early in March from a cook who had come from Chapelton to May Pen and herself took in with Typhoid on February 18th.

Of the 57 primary Chapelton cases 38 were female and 19 male. The age distribution was as follows:

0 years ..	6 cases	15 years ..	7 cases
5 " ..	13 "	20 " ..	12 "
10 " ..	10 "	25 " ..	4 "

Over 30 years 5 cases.

One home had 4 cases, one had 3 cases, six had 2 cases, and thirty-eight had a single case each.

The control measures undertaken were as follows:—

(a) The intake basin was emptied, flushed and disinfected, the mains were flushed out, and measures taken to exclude surface drainage or approach of unauthorised persons to the headworks. The Engineers found it impracticable to instal chlorination.

(b) Hospitalisation of cases—Temporary construction was undertaken at the Chapelton Hospital to accommodate all cases, and arrangements made for accommodation elsewhere if necessary. 47 out of the 57 cases were hospitalized and the remaining 10 adequately cared for at home.

(c) Finding of cases:—House to house visits were made continuously for new or suspicious cases, and to instruct the people.

(d) Inoculation.—This was begun promptly and over 1,500 persons in and near the town were inoculated.

(c) A large number of pamphlets describing symptoms and prevention were distributed.

The age distribution of cases in 1936 was as follows:—

Under 5	82
5–14	453
15–29	516
30 and over ..	226
	1,277

The age group 5–14 provided 35.5% of the total cases, although this group constituted about 27% of the total population. This incidence warrants the undertaking of a programme of anti-typhoid inoculation in Schools, compulsory if necessary, and such a programme would have effect on the adolescent group also in the course of a few years as this latter group is unduly infected.

Because of the previous lack of progress in control of Typhoid, special efforts were made during the year to call attention to the main weaknesses in our defence and to stimulate local Boards to eliminate these. Extensive surveys were carried out by the Sanitary Staffs in respect to parochial water supplies and latrines in townships and populous settlements.

The situation in 1936 as regards public water supplies is summarised in the following table:—

Table VIII.—Public Water Supplies.

	Supply by pipe line to homes or standpipes.	Springs with Protective construction from surface pollution.	Rain water tanks.	Wells.	Springs inadequately protected.
Kingston & St. Andrew					
Liguanea Plains ..	3			..	..
Rural St. Andrew ..	..	22	..	..	..
St. Thomas ..	3	40	1	10	..
Portland ..	2	24	4	2	..
St. Mary ..	5	43	..	4	5
St. Ann ..	4	13	38	..	16
Trelawny ..	3	4	1	..	
St. James ..	2	25	..	..	..
Hanover ..	2	9	..	1	1
Westmoreland ..	2	..	4	2	2
St. Elizabeth ..	1	1	15	1	
Manchester ..	2	1	44	..	3
Clarendon ..	3	13	12	10	
St. Catherine ..	6	19	4	1	37

Classification of Public Water Supplies by Parishes.

Nearly all towns of more than 1,000 population are provided with a piped water supply, but the only towns where the supply is provided with means of continuous purification are Kingston and its suburbs, Spanish Town, Linstead, Port Antonio and Montego Bay. Further, only in the case of the first named can it be said that the operation is continuously reliable, that there is spare equipment against breakdowns (in particular spare chlorinating machines) and that the standard of bacteriological purity is adequately maintained.

The sources of the great majority of these supplies are from open rivers or springs in limestone liable to gross pollution and inadequate provisions for protection from surface pollution of sources is frequently observed even where it is feasible to do so, for example, at Chapelton, Sav.-la-Mar, Annotto Bay, Oracabessa. The supplies for certain towns, e.g., St. Ann's Bay, Ocho Rios, Falmouth and Black River, are from rivers and are liable to serious contamination.

A large number of piped supplies for smaller settlements are taken from spring sources provided with constructional work designed partly for collecting the water and partly for excluding surface pollution. These are generally in limestone, however, and are invariably unsatisfactory bacteriologically.

Many districts have to rely on rainwater catchments and these tank supplies are in the main constructed so as to provide a satisfactory supply. There are 38 public tank supplies in St. Ann, 15 in St. Elizabeth and 48 in Manchester.

It is unsatisfactory to note the increasing number of shallow wells being dug in the Corporate Area of Kingston and St. Andrew as the water so obtained is unsafe.

The results of typical surveys in respect to provision of latrines in towns and settlements are set out in the following Table:—

Table IX.—Latrine Surveys.

Parish.	Town or District.	Total No. premises inspected.	Classification of Latrines.			Per cent. of homes without Latrines.
			D.	E.	F.	
St. Ann	St. Ann's Bay	2,543	1,836	497	210	8
	Brown's Town	3,009	2,539	305	165	5
	Claremont	1,357	819	371	267	20
	Moneague	1,133	639	378	116	10
	Ocho Rios	1,027	902	77	48	5
St. Thomas	Morant Bay	267	219	46	2	.7
	Port Morant	239	143	65	31	12.9
	Trinity Ville	273	241	19	11	4
St. Catherine	Spanish Town	1,127	1,069	58	0	..
	Linstead	293	290	3	0	..
	Old Harbour	235	230	5	0	..
	Lluidas Vale	174	126	48	55	31
	Riversdale	119	90	29	2	1.6
Portland	Port Antonio	1,758	1,271	338	149	8.4
	Manchioneal	764	496	159	109	14.2
	Hope Bay, Swift River, etc.	586	276	230	80	13.6
St. Mary	Port Maria	433	392	41	0	..
	Annotto Bay	293	249	44	0	..
	Highgate	111	86	25	0	..
	Oracabessa	164	130	34	0	..
Westmoreland	Sav.-la-Mar	1,317	233	380	704	53.4
Manchester	Mandeville	430	291	13	1	.2
	Christiana	328	283	59	9	2.7
Hanover	Lucea	206	..	..	63	30.6
	Chester Castle	253	2	100	151	59.6

Note.—D. Sanitary. E. Insanitary. F. No Latrine.

Although it is evident that there is much to be done in these two main measures, the year 1936 was marked by progress far above average with respect to these, due to the active interest taken by the Government.

Local Boards of Health reported the construction of 12,442 new latrines as compared with 10,444 in the preceding year. In the compulsory sewered area, better progress was made than previously in connecting up unsewered premises to sewers.

Other important measures were hospitalization of cases and inoculation of contacts and groups of persons in areas showing unusual incidence. The number of inoculations was increased to 37,947 in 1936 as compared with 35,094 in 1935. In the Corporate area of Kingston and St. Andrew 73% of the cases notified were treated in the Kingston Public Hospital and elsewhere; 83% were hospitalized.

Table X.—Pulmonary Tuberculosis.

Year.	Case Rates.	Death Rates.
1925	57.4	142.9
1926	66.6	129.7
1927	84.2	136.9
1928	96.6	128.9
1929	102.2	126.3
1930	107.3	128.6
1931	127.7	140.1
1932	123.2	118.0
1933	114.8	110.1
1934	127.7	101.4
1935	125.5	98.5
1936	127.6	95.1

Table XI.—Pulmonary Tuberculosis.

Parish.		1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.
Corporate Area of Kingston & St. Andrew	Cases	351	456	494	480	624	565	499	558	589	630
	Deaths	370	335	335	382	409	360	403	384	381	382
St. Thomas ..	Cases	24	39	38	50	54	72	35	108	58	47
	Deaths	78	65	62	67	87	70	49	55	40	53
Portland ..	Cases	49	49	47	36	44	66	76	65	46	36
	Deaths	82	86	94	78	107	85	59	69	58	39
St. Mary ..	Cases	34	41	62	83	86	92	102	80	87	81
	Deaths	91	90	66	103	122	101	97	112	92	61
St. Ann ..	Cases	65	60	57	73	108	82	99	88	106	109
	Deaths	85	90	88	84	100	96	88	81	90	96
Trelawny ..	Cases	6	23	30	49	43	27	44	43	29	31
	Deaths	27	26	41	36	37	20	40	31	27	30
St. James ..	Cases	40	54	42	55	100	120	77	84	64	74
	Deaths	40	55	53	40	55	53	44	33	48	63
Hanover ..	Cases	29	25	9	10	17	24	24	28	28	29
	Deaths	38	26	23	28	43	34	33	36	31	34
Westmoreland ..	Cases	13	19	34	27	14	32	29	30	49	48
	Deaths	62	69	61	73	66	48	53	35	38	43
St. Elizabeth ..	Cases	24	12	19	18	37	27	32	52	62	52
	Deaths	79	96	82	93	106	101	88	57	79	53
Manchester ..	Cases	42	35	40	36	35	35	30	64	59	54
	Deaths	73	89	96	89	74	82	67	52	50	51
Clarendon ..	Cases	43	58	65	63	87	67	80	79	91	89
	Deaths	71	57	67	70	71	67	54	64	69	76
St. Catherine ..	Cases	77	61	67	97	74	96	112	121	121	173
	Deaths	199	160	176	153	178	135	116	103	92	102
Pt. Royal ..	Cases	..	1	2	4	2	1	1	2	..	..
	Deaths	..	1	1	1	1	..	..	1	..	..

In 1936 notifications of tuberculosis in the Corporate Area accounted for 44% of the Island total, and St. Catherine 11%, so that the 3 parishes provided 55% of the total.

The rural dispensary services were continued and extended particularly in St. Ann with the appointment of a full time trained Medical Officer of Health in that parish. The Mobile X-ray Unit travelled 3,237 miles and made 2,417 X-ray examinations, visiting every parish at least once.

The accommodation at the Government wards at the Kingston Public Hospital was taxed beyond its capacity and there was a great increase in surgical work.

Demonstrations on control of rural Tuberculosis by home education through nurses were carried out in St. Catherine, Manchester, Clarendon and Portland. In the first two named parishes, the Rockefeller Foundation co-operated by providing a nurse for full time work on Tuberculosis, while in the other parishes they were done by nurses occupied on other Public Health activities also.

These demonstrations have shown clearly the need for establishment of a Public Health Nursing Service.

Pulmonary Tuberculosis.—1,453 cases and 1,083 deaths were recorded for the year. Improvement in the quality of information on the disease continued, and the diagnosis for practically every case recorded has been checked by bacteriological and/or X-ray examination. The Dispensary and field service under Health Officers aim at following closely every infected family. In the urban areas of Kingston and Saint Andrew this work is carried out by the Kingston Dispensary which notified 37% of the total cases reported for the Island. Health Officers in the other sanitary areas notified 30% of the total cases notified.

Dysenteries.—319 cases were notified, 142 being classified as Amoebic, 19 as Bacillary, and 158 unclassified. 121 of the cases were diagnosed on admission to hospital, and 10 of these died. There is increasing use of laboratory facilities with steady improvement in diagnosis.

There was a water borne epidemic of Bacillary Dysentry at Yallahs with 70 cases but only 1 death. Blood samples from cases indicated infection with the Flexeur X Bacillus.

Intestinal worms.—A survey of school children was carried out by the M.O.H., St. Ann who found that of 385 children examined from 12 schools, 65% harboured hookworms, 86% ascaris, and 90% Trichuris.

Table XII.—Malaria.

	1934.	1935.	1936.
Total Deaths recorded for Island	680	571	672
No. of in-patients Kingston Public Hospital	882	683	1,359
No. of deaths Kingston Public Hospital	32	22	42
No. of in-patients District Hospitals	4,088	2,800	2,638
No. of out-patients District Hospitals	14,363	13,185	14,376
No. of deaths District Hospitals ..	124	119	113

The rainfall for 1936 was 86.2 inches as compared with an average of 73.87 inches for 60 years, the rainfall for the months of April, May and June being nearly double that of the average for 60 years. These prolonged spring rains favoured maintenance of the high incidence of Malaria developed during the preceding 4 years, each with rainfall above average.

In the Corporate area of Kingston and St. Andrew where the disease had shown an increase during the latter quarter of 1935, there was a further increase to serious epidemic proportions following the spring rains, particularly in the western and north-western suburbs of Kingston, due to extension of the coastal swamps and establishment of large numbers of ponds and pools further inland, which lasted for long periods.

Table XIII shows certain data on the incidence of Malaria in the Corporate area of Kingston and St. Andrew during the year.

Table XIII.—Malaria in Corporate Area.

Month.	Malaria In-Patients Kingston Public Hospital.	Malaria Out-Patients Kingston Public Hospital.	Deaths Kingston.
January ..	116	120	6
February ..	91	103	5
March ..	52	82	4
April ..	49	91	3
May ..	44	38	5
June ..	54	51	5
July ..	186	149	6
August ..	255	316	15
September ..	198	330	12
October ..	132	293	8
November ..	95	255	8
December ..	85	207	2

In July a specially experienced officer of the Central Board of Health assisted by the Kingston and St. Andrew Corporation carried out complete surveys for anopheline breeding in the western districts and in planning a programme of control by temporary measures. This programme is now well developed and additional funds have been provided by the Corporation for the purpose. The results have been very satisfactory so far though the measures still have to be tested by a rainy season.

The main breeding places to the west and north-west of Kingston are the following:—

(a) Coastal swamps extending from Greenwich Farm westward to the Ferry River.

(b) Irrigated banana lands further inland from the swamps.

(c) The Duhaney and Ferry Rivers with their dense vegetation and frequent overflowing.

Other important foci in the Corporate area are the Hope River, the Rock Spring Swamp and the large ponds at Bull Bay, and innumerable smaller ponds, temporary or permanent, for several miles inland.

Smaller outbreaks in the Corporate area were observed at unusually high elevations, e.g., Cypress Hall, Toms River and Brandon Hill.

In other parts of the Island a number of smaller outbreaks occurred, in many cases due to formation of inland lakes particularly in the parishes of Manchester and in St. Elizabeth, the latter place being at over 1,000 feet elevation, and Malaria extended further inland and upland than had been observed for many years.

In Manchester inland lake formation occurred in the Harmons-Red berry-Porus area and the New Hall-Derry-Green Hill area, where lake formation had occurred in 1934. Cases began to appear in June in these two areas and reached their maximum in July. The experience of 1934, however, made it possible to institute effective preventive measures promptly, and the incidence of new cases declined rapidly after July. Very few deaths occurred.

On the other hand the lowland areas where control programmes had been in operation for some years showed no important rise in incidence.

The general plan of control laid down in 1933, and described in various previous annual reports has now been established in every part of the Island except Kingston and small sections of St. Ann and Manchester where the disease presents no problem.

Progress both in establishing the plan of census and in effecting reduction of incidence of active yaws is indicated by the fact that whereas in 1935 the Sanitary Staffs reached a total population of 220,232, and found 12,615 cases on an average infection rate of 5.8%, during 1936, they censused 448,288 people and found 15,456 cases on an infection rate of 3.5%.

The two special mobile treatment units of the Yaws Commission continued work in heavily infected districts in St. Thomas, St. Catherine and Clarendon. A report of the Commission is published separately.

A total of 149,534 treatments were given to approximately 28,700 cases as compared with 144,057 treatments to 34,619 cases in the previous year. The greater adequacy of treatment of each case is to be noted, while the decrease in the number of cases is due to the fact that practically every district is showing reduction in the number of active cases on each successive survey.

The following table illustrates the reduction of active cases in various districts.

Table XIV.—Results of Yaws Treatment in certain areas.

	St. James.	Portland.
	Lambs River Medical Dist.	Buff Bay Medical Dist.
Population	7,384	19,898
No. of active cases found	161 (2.2)	14.4
No. of active cases found on later surveys . .	93 (1.1)	2.8
Interval between surveys	6 months	1 year.

In St. Catherine the second half yearly survey of a population of approximately 40,000 showed that the average incidence of active yaws had fallen from 2.5% to 1.7% in 6 months.

The experience of the past 3 years shows that the existing permanent medical and sanitary staffs are effecting reduction generally in the incidence of active yaws in areas of light or moderate infection, even though the sanitary staffs in certain parishes are not large enough to devote adequate attention to the problem. In areas of heavy infection, however, it will be necessary to maintain mobile treatment units until the incidence has been sufficiently reduced for permanent staff to cope with it.

Leprosy.—45 cases were notified, 11 of which were from the parish of St. Catherine, and 8 from Kingston.

At the end of the year there were 232 known lepers in the island, 169 of whom were in the Lepers' Asylum.

Special efforts were made during the year to collect basic epidemiological information with regard to the cases, and much closer supervision is being exercised over those living at home. With the increased interest in their welfare and improved conditions in the Lepers' Home, there is greater willingness on their part to enter the institution with the result that daily average number of inmates increased from 139 in 1935 to 155 in 1936. During the year there were 15 deaths in the Lepers' Home, and 3 cases were discharged.

The Lepers' Home is now congested and there is urgent need for increased accommodation particularly for female patients.

VENEREAL DISEASES.

In the Kingston Public Hospital 449 cases of Syphilis and 317 of Gonococcal Infections were treated with 23 and 1 deaths respectively. District Hospitals admitted 1,072 cases of Syphilis with 49 deaths and 1,099 of Gonococcal Infections with 2 deaths.

A Male Free Clinic was established in Kingston in October 1936. Patients seen and treated at this Clinic as well as at the Women's Free Clinic established in 1935 are as follows:—

	Women's Free Clinic.		Male's Free Clinic.	
Disease.	New patients treated.	No. of treatments.	New patients treated.	No. of treatments.
Gonorrhoea . .	3,252	67,047	1,221	24,768
Syphilis . .	1,683	17,199	1,332	6,453

The visit of Mrs. Neville Rolfe, Secretary-General of the British Social Hygiene Council, was followed by assistance being granted to the extent of £5,800 by the Colonial Development Fund on condition that the Colony provided the balance necessary to start Venereal Diseases Clinics at Kingston, Montego Bay, Port Antonio and Spanish Town, and to improve the facilities at the Public General Hospital. A sum of £6,165 has been provided in the Estimates to carry out this programme.

Water Supplies.—£25,175 were spent on improvements to water supplies from the Parochial Water Supplies Fund. Provision of £77,500 has been made in two instalments of the Loan Proposals, and loans amounting to £36,000 have already been approved in respect to the supplies of Montego Bay, May Pen, Chapelton and Lucea, while proposals for improvements of other supplies were put in course of preparation.

Food Supplies.—A total of 670 dairies were on the registers of Local Boards at the end of the year, 142 being in St. Andrew, 39 in St. James, 34 in St. Catherine and 23 in Trelawny. A total of 2,604 visits were paid to these dairies and steady improvement is being obtained from a sanitary standpoint, particularly in St. Andrew, St. James, Trelawny and Manchester.

Model regulations for control of slaughter and sale of meat were prepared, but are not yet in force. Difficulty in enforcing them with any degree of satisfaction will continue until more parochially controlled slaughtering places are established. Nevertheless the Sanitary Staffs increased their number of inspections with 15,663 condemnations. At the Kingston Slaughter House the following animals were slaughtered: 10,511 cattle, 619 sheep, 6,164 goats, 7,810 pigs, and 148 turtles. Condemnations for Tuberculosis in cattle were as follows:—

Whole carcases	14
Lungs and pluck	165
Head	72
Liver	17
Spleen	3
Intestines	27
Udder	3

26% of cows' livers, 14% of sheeps' livers and under 1% of pigs' livers showed parasites. 17 whole carcases of pig were condemned for Tuberculosis, while goats showed no infection with tuberculosis.

Over the island there were 75,683 inspections with 1,890 condemnations of other foods chiefly among grocery store stocks of canned foods, salted fish, flour and the like.

Maternity and Child Welfare.

11 Local Boards employ 46 part-time registered midwives at a total cost of £1,610 per annum, who are subsidised at a rate of £25 to £50 each to reside in a specified district so as to be available for cases of labour. They are entitled to collect such fees as they can, though some Boards fix a scale. The service was originally provided under the Poor Law Authority as a relief measure, but, generally speaking, it has not been accomplishing its purpose as the majority of the midwives get very few cases indeed to deliver. One reason for this is that the midwives are not provided with a means of travelling and the patient requiring her services, or the Parochial Board, must stand the cost of the nurse's transport, but another very important reason is the lack of understanding on the part of the less educated classes as to the importance of skilled attention in pregnancy and labour. Health Education in Maternity is therefore included in the experimental programme of Public Health Nursing which is referred to later.

The Out-patient Department of the Jubilee Maternity Hospital in Kingston which was established in 1935 showed a considerable increase in ante-natal attendance; but this is the only hospital which provides this service.

The Infant Welfare Association in Kingston subsidised by Government submits the following for 1936:

"The attendances at the clinics of the Child Welfare Association showed decreases for the year ended 31st March, 1937. There were 17,748 attendances at sick Clinics as compared with 18,202 in the previous year and 5,622 attendances of well babies."

The Kingston & St. Andrew Corporation provided a Medical Officer and 2 nurses for examination of school children. During 1936, this staff examined 4,921 children in the Corporate area. The chief defects found were as follows:—

Granulated lids	36.2%
Defective Vision	3.2%
Septic Tonsils	22.4%
Carious Teeth	30.0%

In addition to the above the great majority of school children in the rural districts of the area are known to be infected with helminthis, particularly hookworm and round worms. Even in urban areas the incidence is fairly high. The School Medical Officer has classified this group of children in respect to their nutritional state as follows:—

Good and very fair	56 %
Subnormal	29.8%
Bad	14.0%

The percentage of children in the Corporate Area with carious teeth, though high, is less than half that found in parishes where no school dental clinics exist. The Dental Clinics in this area have been in operation for nearly 10 years and remarkable improvement has been effected not only by reduction of dental defects, but by teaching of oral hygiene. Further encouragement has been given recently by offering prizes to schools showing the most satisfactory conditions in respect to oral cleanliness, and certain teachers have given the matter most active attention.

Correction of defects for the Corporate Area is provided at the Kingston Public Hospital where the School Medical Officer conducts an Eye Clinic 3 afternoons a week, and obtains assistance from the staff generally. In rural areas Medical Officers in charge of districts undertake some treatment also.

The Eye Clinic for school children dealt with 1,726 new cases and had a total attendance of 12,455. Corrective work does not, however, receive the support from parents which is necessary, and far more education is required.

The school requirements for the Corporate Area are far more than can be met by the existing staff. There are some 25,000 school children in the area and only approximately 5,000 are examined per annum while even among those examined many fail to take advantage of the treatment facilities provided due to distance or lack of interest on the part of parents.

Outside of the Corporate Area of Kingston and St. Andrew it has not yet been possible to carry out routine medical inspection of school children, but with the provision of a few Public Health Nurses, demonstrations are being made in the parishes of Portland, Clarendon, St. Catherine and St. Ann on this activity.

Nine Parochial School Dental Clinics were continued as in the previous year, which examined 20,715 new children, and recorded 14,770 extractions and 13,479 fillings.

Nutrition.—Malnutrition occurs to an unsatisfactory degree particularly among children of the poorer classes. The main factors concerned are an unbalanced dietary, inadequate use of protective foods, certain common diseases such as Malaria and Intestinal Parasites and, in some areas, undernourishment due to poverty.

Protein.—The main weakness in the dietary of the agricultural worker and his children is the lack of protein and particularly of animal protein, though these classes are also short of animal fat, with the result that their diet shows a relatively great excess of carbohydrate. Further the dietary habits of the labouring classes do not include green or red vegetables to any extent.

Reference has been made above to the occurrence of a "deficiency" optic neuritis in children which is corrected readily by administration of Cod Liver Oil. The children of all classes do not drink enough cows milk, while those of the lower classes get exceedingly small quantities, and the habit of feeding children on sweetened condensed milk is far too common. In certain areas goats milk is used to a limited extent, but generally speaking, there is a lack of knowledge of the importance of fresh milk for growth of the child with consequent lack of production of milk at prices within the reach of the lower classes in adequate quantities. Shortage of milk connotes lack of local production of butter. Local butter supplies have been reduced in recent times due to the competition of cheaper New Zealand Butter. The value of separated milk for human growth is not appreciated and the lack of its use possibly helps to keep up the price of local milk products.

The per capita consumption of fresh meat is exceedingly small for the great bulk of the population. The animal protein requirements are met to a small extent by the use of imported salted fish, chiefly cod and mackerel which are commonly used in small quantities by the working classes. Dietary habit and convenience of purchase, account to a considerable extent for the use of these articles, and it is possible by education to get a large proportion of the rural population to replace this source of animal protein by locally produced poultry, eggs, goats, pigs, rabbits, fresh fish, etc. The importance of animal protein to growth must be emphasised through the educational channels available to the Educational, Agricultural and Medical Departments.

Vegetable protein is not produced in adequate quantities with the result that there is considerable importation of peas, and the encouragement of locally grown crops high in protein is most desirable.

Fat.—The poorer classes depend mainly on cocoanut oil for their fat supply which is lacking in vitamins. Very little Margarine is imported. Bony rickets is not very common, however, and usually disappears after childhood.

Fruit.—There is no lack of fruit except to the poorest classes in the larger towns.

Vegetables.—The dietary habits of the agricultural worker include green and red vegetables only to a very limited degree. The Agricultural Department is making excellent progress in encouraging extension of these crops, and in time a change in these habits may be expected.

Arising primarily out of this problem of undernutrition of school children among the poorest classes in Kingston, voluntary effort established a School Kitchen at the St. George's Elementary School to provide a mid-day meal, but children who can afford to pay for their lunch do so, and the plan is self supporting.

The Education Department has provided grants to a selected number of schools as demonstration, to assist them in establishing kitchens, and plans are in progress for extending the scope of school gardens to include education in producing crops for a properly balanced diet.

Public Health Nursing.—Experimental demonstrations of the use of Public Health Nurses were undertaken in a few parishes. The Rockefeller Foundation assisted in these demonstrations particularly with respect to rural tuberculosis. School Medical Inspection, Maternal Hygiene, and general health education, were also included in the demonstrations, and these have served to create the interest of Local Boards of Health. The Government has proposed a scheme for Public Health Nursing on a co-operative basis with Local Boards of Health, some of which are already making arrangements to undertake the service.

RECOMMENDATIONS.

1. Provision of a Sanitary Engineer with special experience in water purification and anti-malarial work. Local Boards are now showing willingness to instal purification plants as an essential requirement for reduction of Typhoid Fever, but expert advice is necessary both for installation and maintenance.

Reliance for malaria control has hitherto been placed mainly on continuously maintained "temporary" measures and each year sees an extension in their application. While they have been of the greatest value, these temporary measures are never as efficient as permanent measures, and it is considered that in several malarious areas it is possible to effect drainage adequate for anti-malarial purposes at very low cost. Conditions in many coastal swamps for example, can be considerably improved by tidal drainage at low cost.

2. Provision of a school medical service. It is to be noted however that developments in this direction will involve provision of additional facilities for treatment and correction of defects.

3. Modification of existing regulations with respect to food-handlers. The present regulations which have been in existence for many years call for a monthly inspection by the Medical Officer of Health of butchers, bakers, and dairymen, and in some parishes this inspection is extended to include grocers who retail bread. Although the procedure has some value from an educational point of view, the actual return in disease prevention is exceedingly small compared with a large amount of time and travelling entailed, which could be used much more effectively on such activities as School Hygiene. One Local Board has so far agreed to modifications.

The Regulations as to control of the food-handler should be varied so as to improve the sanitary standard of the places where and the conditions under which food is prepared and sold.

4. The development of a Public Health Nursing Service to undertake maternal and child hygiene, school hygiene, and communicable disease control.

J. M. HALL,
Assistant Director of Medical Services (Health).

IV.—PORT HEALTH WORK.

Report of the Medical Officer of Health in charge of the Quarantine Service, for the year 1936.

1,338 vessels, with a total tonnage of 4,288,977 tons, entered Kingston and Port Royal from overseas during 1936, and 272 seaplanes arrived at Harbour Head.

At the outports, the total number of vessels entering from overseas and boarded by the Boarding Medical Officers, was 135.

One case of modified Small Pox arrived on the S.S. Mataroa, bound for New Zealand. The case remained isolated on board.

Jamaica is not a signatory to the International Sanitary Convention of 1926, but the Quarantine methods in vogue have materially helped to prevent the entry of Dangerous Infectious Diseases into this Island.

Port Sanitation has not been extended to the Sanitary Examination of vessels. This examination is done by the countries signatory to the Convention.

No law exists at present which gives the Port Sanitary Authority here the right of entry for Sanitary Examination on vessels, except when cases of Infectious Disease occur on board.

There is no semblance of attempts at rat-proofing of docks and warehouses in the vicinity of the docks by their owners. The owners are being shown the advisability of such a great rat-repressive measure.

A number of the staff of Ratguard Inspectors in Kingston have been trained in rat-repressive measures,

Number of vessels fumigated—

(1) By Sulphur	nil.
(2) By Hydrocyanic Acid Gas	27
Fumigation fees for year	£107 12 6
Quarantine fees collected for the year from April to December amounted to	1,263 10 9
No. of rats destroyed by Hydrocyanic Acid Gas	119
No. of vessels on which rats were found	15
No. of rats trapped and poisoned—	
on ships	20
on shore	1,143
No. of dead rats found on vessels after fumigation with Hydrocyanic Acid Gas from April 1st 1936, to 31st December, 1936	119
Type of rats destroyed—	
Brown (R. Norvegicus)	90
Black (Rattus Rattus)	29

On examination, no plague infected rates were found.

Mrs. Neville-Rolfe, Secretary General of the British Social Hygiene Council and President of the Ports Commission, visited the Island in April. A special meeting of the Quarantine Board was held to deal with the question of Venereal Diseases in Ports and amongst Seamen and the recommendations were forwarded to Government. A Port Welfare Committee has been formed and definite line of action taken.

New arrangements were made during the year in connection with Quarantine procedure at Port Royal. These were embodied in a circular letter to all Shipping Agents. The new scheme has worked satisfactorily and detail is given later in this report.

Circulars 148 and 149—Quarantine regulations—were issued in April and circularised to all persons concerned.

Necessary repairs to the Boarding Launch and Quarantine Station were carried out during the year.

The Department lost the highly valued services of Mr. Charles Don, the Secretary of the Quarantine Board, who retired on reaching the age of 66. Shortly before his retirement, he was honoured by His Majesty the King with the award of the Membership of the Order of the British Empire. Dr. John N. McIntosh was appointed to the new Department created by the re-organisation of the Quarantine Service. Mr. Don was appointed a Member of the Quarantine Board by His Excellency the Governor.

The health work of the ports received the co-operation of the respective Health Departments of His Majesty's Customs, of the Pilots, and of the Members of the Shipping Companies, and their assistance and courtesy are gratefully acknowledged.

John N. McIntosh,
Medical Officer (Health) in charge of Quarantine
Service, and Secretary Quarantine Board,
Jamaica.

V.—HOSPITALS AND DISPENSARIES.

The following is a list of the Hospitals and Institutions of the Medical Department:

			No. of beds.
Public Hospital, Kingston			380
Maternity Hospital, Kingston			100
Public Lunatic Asylum, Kingston			2,023
Public General Hospital,		Morant Bay	32
Do.	do.	Hordley	40
Do.	do.	Port Antonio	55
Do.	do.	Buff Bay	50
Do.	do.	Annotto Bay	60
Do.	do.	Port Maria	67
Do.	do.	St. Ann's Bay	42
Do.	do.	Cave Valley	14
Do.	do.	Falmouth	25
Do.	do.	Ulster Spring	8
Do.	do.	St. James'	72
Do.	do.	Lucea	30
Do.	do.	Sav.-la-Mar	68
Do.	do.	Black River	72
Do.	do.	Mandeville	37
Do.	do.	Chapelton	35
Do.	do.	Lionel Town	50
Do.	do.	Spanish Town	70
Do.	do.	Linstead	90
Lepers' Home, Spanish Town			120

Owing to increased demands the official accommodation at some Hospitals has been insufficient and arrangements for increased accommodation had to be made, for example, St. James' Hospital now holds 124 with some difficulty. Several other hospitals are now running with beds considerably above their official acommodation despite every effort to exclude cases that can attend from their homes and to transfer chronic cases that should properly be treated in Poor Houses.

The following table shows a comparison of the work of Hospitals over the past three years:—

	Kingston Public Hospital.			District Hospitals.		
	1934.	1935.	1936.	1934.	1935.	1936.
In-Patients ..	8,133	8,269	8,926	23,067	23,346	23,021
Out-Patients ..	171,318	162,311	169,821	94,960	105,705	91,765
Deaths	742	698	712	1,110	1,216	1,196

During 1936, 14,353 major and minor operations were performed in the hospitals.

In the X-ray Department of the Kingston Public Hospital 3,721 patients were examined as compared with 2,765 in 1934 and 3,105 in 1935.

OUT-DOOR DISPENSARIES.

The public took advantage to a greatly increased extent of the out-door dispensary Ticket system established in 1934, there being 204,527 attendances during the year as compared with 59,327 attendances in 1935.

BUILDINGS.

Special accommodation for Maternity cases consisting of Labour Room, Maternity Ward, Baths, etc., has been provided during the year at the Port Maria, Lucea and Spanish Town Public General Hospitals, and it is hoped to continue to extend these facilities to all other District Hospitals.

Special expenditure for covered ways between Hospital buildings from Wards to Operating Theatres, Kitchens, etc. has been made and practically every Hospital is now well provided for in this respect.

Despite these improvements the state of a number of hospital buildings is very bad and a very considerable sum is necessary for rebuilding and repairs to put all medical institutions in a satisfactory condition.

T. J. HALLINAN,
Director of Medical Services.

HOSPITALS AND DISPENSARIES.

(A) *Report and Return of the Medical Superintendent, Kingston Public Hospital.*

There were 647 more patients admitted than in the previous year due to the incidence of Malaria Fever. The number treated in all departments show an increase over 1935, viz.:—

Out Patients Dept. (including all clinics) ..	7,510
Surgical Operations	325
Department of Radiology	616

32 Nurses from Kingston Hospital, 35 from the Country Hospitals and 1 from U.S.A. passed their final examination. Lectures to the Nursing Staff have been given by the Medical Staff, Matron and Assistant Matron.

5 Students qualified as Dispensers.

The Board of Visitors held their quarterly meetings and inspected the Institution.

I have to thank all those who have sent books, magazines, etc., for the use of the patients.

Toys were distributed to the children in the Nuttall Wards on Christmas Eve by His Excellency the Governor and Lady Denham. A tour of the other Wards took place afterwards.

The Colonial Secretary also inspected the Institution in August.

The new Operating Theatre is being erected and will be an improvement on the existing one.

A new Out-Patients Department is urgently needed. The present one is too small and there is insufficient allowance for ventilation and this cannot be remedied owing to its construction. Casualty cases on stretchers or walking, have to be taken up a flight of uncovered steps to the Dressing Room. This is a potential danger at all times.

I wish to draw attention to the necessity for increasing the Medical and Nursing Staffs of the Hospital owing to the increasing volume of the work.

The usual statistical tables are attached.

In conclusion, I have to record my appreciation of the loyal co-operation of the entire staff of the Institution in the performance of their duties during the year under review.

Table I.

	Males.	Females.	Total.
Patients remaining in hospital 1st January, 1936	211	152	363
Patients admitted during the year 1936 ..	4,389	4,174	8,563
Total patients treated	4,600	4,326	8,926
Of those were cured	1,757	1,870	3,627
Of those were relieved	1,960	1,732	3,692
Of those were not relieved	300	255	555
Of those died	388	324	712
Remaining in Hospital December, 1936 ...	195	145	340
	4,600	4,326	8,926

Table II.

Daily average number of beds occupied by male patients	224
Daily average number of beds occupied by female patients	168
Average stay in days of those who died, Males	9
Average stay in days of those who died, Females	10
Average stay in days of males discharged	19
Average stay in days of females discharged	17
Average stay in days of males remaining at end of year	30
Average stay in days of females remaining at end of year	22
Longest stay of any one patient—days	366

Table III.

Patients who died within the following hours after Admission:—

12		24		48		72		Total.	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
61	52	63	70	28	22	29	20	181	164

Table IV.

Countries.	No.	Parishes.	No.
America	6	Kingston	5,137
Arabia	1	St. Andrew	3,348
Canada	2	Port Royal	18
China	10	St. Thomas	57
Cuba	5	Portland	29
Denmark	1	St. Mary	48
England	47	St. Ann	19
France	3	St. James	11
Grand Cayman	11	Trelawny	13
Haiti	3	Westmoreland	3
Holland	2	St. Elizabeth	16
India	35	Manchester	17
Jamaica	8,787	Clarendon	31
Norway	5	St. Catherine	109
Palestine	1	Hanover	7
Spain	4	Foreign	63
Syria	3		
	8,926		8,926

Table V.—Diseases and Deaths in the Public Hospital, Kingston, during 1936.

	Cases.	Deaths.
I. *Epidemic, Endemic and Infectious Diseases.*—		
Enteric Fever	320	53
Malaria	1,359	42
Chicken Pox	1	..
Diphtheria	1	..
Influenza	45	..
Mumps	6	..
Dysentery		
(a) Amoebic	61	8
(b) Other or unspecified	5	..
Leprosy	3	..
Acute Poliomyelitis	4	..
Yaws	9	..
Dengue Fever	1	..
Cerebro-Spinal-Meningitis	1	1
Tetanus	15	10
Tuberculosis (all forms)		
Respiratory System	154	12
Intestines and Peritoneum	10	2
Joints	8	..
Other Organs	4	..
Gonococcal Infection	295	1
Gonorrheal Ophthalmia	22	..
Syphilis	430	10
Congenital Syphilis	19	13
Septicaemia	3	3

	Cases.	Deaths.
II. *General Diseases not included in* I—		
Cancer:—		
Pharynx, Oesophagus, Stomach, Liver and Annexa	26	7
Peritoneum, Intestines and Rectum	9	3
Female Genital Organs	43	9
Breast	15	..
Skin	4	..
Other or unspecified organs	22	8
Tumours not returned as malignant (Brain and female organs excepted)	20	..
Rheumatic Fever	12	..
Chronic Rheumatism and Arthritis	17	..
Pellagra	7	2
Diabetes	73	13
Anaemia Chlorosis, Pernicious and other Anaemias		
Pernicious Anaemia	6	1
Other Anaemias	17	4
Exophthalmic Goitre	1	..
Other diseases of the Thyroid Gland	9	..
Diseases of the Pituitary Gland	1	..
Diseases of the Thymus Gland	2	2
Diseases of the Spleen	5	..
Leukaemia, Lymphadenoma	5	4
Alcoholism (acute or chronic)	6	..
Chronic poisoning by mineral substances	5	1
Chronic poisoning by organic substances	3	..
Purpura	1	1
Haemophilia	1	..
III. *Diseases of the Nervous System, etc.*—		
Meningitis	7	7
Tabes Dorsalis	35	3
Other diseases of the Spinal Cord	5	..
Cerebral Haemorrhage	22	19
Cerebral Embolism	1	1
Cerebral Thrombosis	5	1
Hemiplegia	9	4
Other forms of paralysis	13	2
Other forms of insanity	24	..
Epilepsy	23	2
Convulsions (non-puerperal)	7	1
Hysteria	12	..
Neuritis	41	...
Other diseases of the Nervous System:		
Cerebral tumour	2	1
Paralysis Agitans	1	..
Disseminated Sclerosis	1	..
Diseases of the Eye and annexa	269	...
Diseases of the Ear and Mastoid Sinus:		
Diseases of the Mastoid Sinus	11	1
Diseases of the Ear	15	1
IV. *Diseases of the Circulatory System*—		
Pericarditis	1	1
Endocarditis	7	2
Myocarditis	43	16
Other diseases of the Heart:		
(1) Aortic Valve disease	13	2
(2) Mitral Valve disease	32	7
(3) Aortic and Mitral Valve disease	26	10
(4) Dilatation of heart and cardiac failure	23	23
(5) Heart diseases undefined	23	3
Diseases of the Arteries:		
Aneurysm	12	6
Embolism and Thrombosis (not cerebral)	2	2
Other diseases of the arteries	7	4
Diseases of the Veins	54	..
Diseases of the Lymphatic System	162	3
Other diseases of the Circulatory System	26	7
V. *Diseases of the Respiratory System*—		
Diseases of the Nasal Fossae and Annexa:		
Diseases of the accessory nasal sinuses	18	..
Diseases of the Larynx:		
Laryngitis	3	..

	Cases.	Deaths.
Bronchitis:		
(a) Acute Bronchitis	17	..
(b) Chronic Bronchitis	151	5
Broncho Pneumonia	87	35
Lobar Pneumonia	65	26
Pneumonia (not defined)	41	17
Pleurisy:		
(1) Empyema	3	2
(2) Other pleurisy	53	2
Congestion of and haemorrhagic infarct of lung	2	2
Asthma	14	1
Other diseases of Respiratory System	6	..
VI. *Diseases of the Digestive System—*		
Diseases of the buccal cavity and annexa	31	1
Tonsillitis and Adenoid vegetations	136	1
Ulcer of Stomach	37	10
Duodenal Ulcer	11	1
Inflammation of Stomach	58	..
Other diseases of Stomach	49	1
Colitis	44	4
Other Diseases	95	13
Ankylostomiasis	25	..
Diseases due to other intestinal parasites	23	4
Appendicitis	487	11
Appendix Abscess	19	6
Hernia	136	3
Intestinal obstruction	28	22
Other diseases of the Intestines:		
Intestinal Statis	63	..
Other diseases	56	1
Cirrhosis of the liver (not returned as alcoholic)	39	12
Cirrhosis of the liver (returned as alcoholic)	1	..
Biliary Calculi	3	..
Other diseases of liver	24	5
Diseases of the Pancreas	2	2
Peritonitis without stated cause	15	12
VII. *Non-Venereal Diseases of Genito-Urinary System and Annexa.—*		
Acute Nephritis (under 10 years)	8	5
Chronic Nephritis	99	36
Other diseases of the Kidneys and Annexa	130	27
Calculi of the urinary system	14	1
Cystitis	36	4
Other diseases of the Bladder	8	...
Diseases of the Urethra:		
(1) Stricture of the Urethra	41	6
(2) Other diseases of the Urethra	32	1
Diseases of the Prostate	17	3
Non-venereal diseases of Male Genital Organs	76	1
Cysts and other tumours of ovary not returned as malignant	24	...
Salpingitis and pelvic abscess:		
(1) Salpingitis and pyosalpinx	185	2
(2) Salpingo-oophoritis	27	2
(3) Pelvic abscess and peritonitis	9	3
Tumours of the Uterus not returned as malignant	156	5
Non-puerperal uterine haemorrhage	19	..
Other diseases of the Uterus	213	3
Diseases of other female Genital Organs not included under other headings	6	..
Non-puerperal diseases of Breast	14	..
VIII. *The Puerperal State—*		
Accidents of Pregnancy:		
(a) Abortions	32	..
(b) Ectopic	25	2
(c) Other accidents of pregnancy	5	..
Pregnancy	11	..
Other accidents of childbirth	11	
Puerperal Sepsis	2	1
IX. *Diseases of Skin and Cellular Tissues.—*		
Gangrene	9	3
Carbuncle and Boil	10	1
Cellulitis	44	3
Abscess	83	1
Other diseases of skin and annexa:		

	Cases.	Death.
Ulcer and bed sore	96	1
Eczema	29	1
Other diseases	92	5
X. *Diseases of the Bones and Organs of Locomotion*—		
(1) Acute osteomyelitis and periostitis	38	2
(2) Other diseases of the bones	17	..
Diseases of the joints	47	..
Amputations	36	..
Other diseases of the organs of locomotion	48	..
XI. *Congenital Malformations*—		
Congenital malformation of heart	1	..
Other congenital malformations	23	2
XII. *Diseases of Early Infancy*—		
Diseases of the umbilicus	4	3
Other Diseases	34	14
XIII. Senile Dementia	8	..
Other forms of senile decay	6	1
Accidental burns	95	5
Accidental injury by firearms	7	3
Accidental drowning	2	2
Accidental injury by piercing or cutting instruments	24	1
Accidental injury by fall	13	..
Accidental injury by other forms of crushing	338	6
Fractures	276	9
Dislocations	14	..
Food Poisoning	1	..
Starvation	1	1
Ill defined causes	243	8
	8,701	712

Table VI.

	Cases.
1. *Operations upon the Female Genital Organs.*	
Pan Hysterectomy	2
Total Hysterectomy	8
Sub-total Hysterectomy	127
Myomectomy	7
Salpingectomy	55
Saplingo-oopherectomy	29
Draining Pyosalpinx	11
Oophorectomy	17
Ovariotomy	1
Draining Ovarian Cyst	15
Excision of Broad Ligament Cyst	9
Excision of Pelvic Abscess	4
Ectopic Gestation	24
Uterine Suspension	9
Curettage	109
Dilation of Cervix	14
Perineorrhaphy	1
Colporrhaphy	2
Repair of Recto-vaginal fistula	1
Repair of Vesico-vaginal fistula	2
Operation for imperforate Hymen	1
Removal Cervical Polypi	1
Plastic Operation—Vagina	2
Trachelorrhaphy	1
2. *Operation on Hernia.*—	
Herniotomy, Inguinal, etc.	101
Umbilical Hernia	4
3. *Operations for Appendicitis*—	
Appendicectomy	487
Appendix Abscess	19

	Cases.
4. *Operations on Stomach and Intestines.*—	
Perforation of Gastric Ulcer	3
Laparotomy for Intestinal Obstruction	2
Gastro-enterostomy	6
Gastrotomy	2
Excision of Omentum	2
Draining peritoneal cavity (Peritonitis)	1
Draining Abdominal Abscess	1
Resection of Coronary artery	1
Draining Abdominal Wall Cyst	2
Exploratory Laparotomy	37
Colostomy	3
Operation for Intussusception	1
5. *Operations on the Kidneys and Bladder*—	
Nephrectomy	1
Supra Pubic Cystostomy	18
Cystoscopy	8
Uretro-colic transplantation	1
6. *Operations on the Penis and Urethra*—	
Circumcisions	229
Dilating Urethral Stricture	57
7. *Operations on the Testicles and Scrotum*—	
Orchidectomy	3
Radical cure for Hydrocele	21
Varicocele	2
Undescended Testicles	2
Scrotal Abscess	2
Steinach Ligature	4
Haematocele	2

	Cases.
8. *Operations on Rectum and Anus*—	
Haemorrhoidectomy	32
Injection of Haemorrhoids	8
Plastic for Congential Anus	1
Dilating Rectal Stricture	19
Sigmoidoscopy	2
Anal Fistulae	2
9. *Amputations*—	
Legs	14
Toes	5
Fingers	15
Forearms	2
10. *Operations on the Thorax*—	
Amputations of Breast for malignancy	11
Adenoma of Breast	2
Empyema	1
Thoracoplasty	1
Lobectomy	1
Draining Lung Abscess	2
Oesophagoscopy	4
Thoracostomy	1
Bronchoscopy	1
11. *Operations on the Ear*—	
Radical cure for Mastoid	2
Conservative operation for Mastoid	4
12. *Operations on the Nose*—	
Removal of Adenoids	348
Tonsillectomy	672
Dissection of Tonsils	50
Nasal Polyp	39
Tubinectomy	5
13. Operations for Cleft Palate	5
Hare Lip	5
Papilloma	1
14. *Operations on Tendons*—	
Suturing Tendons	1
15. *Operations on Antrum and Frontal Sinus.*	23
16. *Ophthalmic Operations*—	
Extraction of Cataract	68
Needling Cataract	105
Scleral Trephine	11
Needling Capsule	14
Iridectomy	25
Enucleation of Eyeball	38
Meibomiam Cysts	60
Pterygium	136
Lachrymal Apparatus	9
Operation for Squint	2
Needling Lens	4
Excision of Conjunctival Cyst	2
Repairing Socket	2

	Cases.
17. *Operations on Infections of Bones*—	
Osteomyelitis	33
Sequestrotomy	52
Osteotomy	6
18. Dislocations	7
19. Trephining Skull	3
20. *Fractures of Bones*—	
Wiring Fractures	5
Open operation for Fractures	10
Reduction of Fractures	9
Plasters	13
21. *Operations on the Thyroid Gland*—	
Thyroidectomy	4
Adenoma Thyroid.	1
22. *Operations on Liver and Gall Bladder*—	
Cholecystectomy	4
Cholecystostomy	1
23. *Excision of Glands*—	
Cervical	2
Inguinal	63
24. *Incision of Abscess*—	99
25. Removal of foreign bodies	47
Examinations	55
Excision of Toe Nail	71
Excision of Finger Nail	14
Excision of Lipoma	4
Ligature of Arteries	3
Diathermy Therapy	176
Excision of Bursea	3
Breaking down Adhesions	5
Scraping Ulcer	9
Phrenicectomy	36
Excision of Warts	5
Draining Lymphatic obstruction	1
Excision of Ganglion	8
Incision of Carbuncle	1
Suturing Wounds	3
Opening Septic Hand	5
Extraction of Tooth	9
Excision of Fibroma	2
Biopsy	5
Keloids	2
Draining Knee Joint	1
Removal of Semi-lunar Cartilage	1
Excision of Sebaceous Cyst	19
Excision of supernumerary digits	7
Excision of growth	29
Incision Haematoma Scalp	2
Fistulae	2
Excision Ranula	1
Plastic for Rodent Ulcer	1
Aspiration Knee Joint	2
	4,071

Table VII.

N. A. B.	Bismuth.	G. C. Vaccines.	Tartar Emetic.	Individuals treated with N.A.B.	Treated for V.D.	Admissions		Discharges.		Dressed and Irrigated.		Operations.	Prescriptions Dispensed.	
						M.	F.	M.	F.	M.	F.		Wards	O.P.D.
12,785	14,813	1,704	253	7,749	25,798	395	613	385	519	33,163	2,334	408	2,491	14,222

Table VIII.

No. of patients treated with tickets from authorised persons	9,728
No. of patients treated without tickets	137,514
Eye, Ear, Nose and Throat Clinic	11,364
Orthopaedic Clinic	4,051
Total number of Out-patients for 1936	169,821
Minor Operations	6,425
Motor Car Cases	739
No. of prescriptions for patients with tickets from Authorised persons	39,279
No. of prescriptions for patients without tickets	53,951
No. of prescriptions for Constabulary	782
No. of prescriptions for Victoria Jubilee Hospital	1,544
No. of prescriptions for Ante-Natal Clinic	595
No. of prescriptions for Tuberculosis Hospital	1,031
No. of prescriptions for School Clinic	13,512
No. of prescriptions for Railway	105
No. of prescriptions for Farm School	27
No. of prescriptions for Nurses Home	12
No. of prescriptions for Male Free Clinic	155
No. of prescriptions for Female Free Clinic	685
No. of Stock Preparations for Mannings Home	12

Table IX.—Summary of work performed at the Dental Clinic attached to the Public Hospital, Kingston.

No. of patients treated	4,489
No. of Extractions	7,877
No. of Mouth Washes prescribed	125
No. of Minor Operations	3
No. of Cases treated	13
No. of removal of Necro Process	6
No. of Cleanings	1

S. C. Depass,
Surgeon Dentist, Public Hospital, Kingston.

Table X.—*Radiology Department.*

Total Number of patients X-rayed from January to December, 1936	3,721
No. of Gastro-Intestinal cases	269
No. of Gall-bladders	78
No. Renal Cases	150
No. of Obstetrical Cases	25
No. of Fractures	2,132
Miscellaneous Examinations	1,067

C. H. Parkin,
Radiologist, Public Hospital.

(B) *Report and Returns of the Resident Medical Officer, Jubilee Maternity Hospital.*

Admissions (Including re-admissions)		1,819
Married Patients		423
Single Patients		1,396
Deliveries:—		
Live Births		1,357
(a) Full Term		1,248
(b) Premature		109
Dead and Still Births		70
Macerated		43
Miscarriages		41
Operative Deliveries including Inductions		20

There were 49 Breech, including Footling, Presentations.

Twins		24
Triplets		2
Deaths:—		
Maternal		23
From Eclampsia	7	
From Ante Partum Haemorrhage	1	
From Post Partum Haemorrhage	3	
From Nephritis	2	
From Myocarditis	3	
From Sepsis	3	
From Pyaemia	1	
From Shock	1	
From Malignant Malaria	1	

From Paralytic Ileus	1	
Infantile		48
From Umbilical Haemorrhage	2	
From Haemophilia	1	
From Congenital Mal-formation (intestines)	1	
From Deficient Vitality	44	
Maternal Abnormalities and Complications.		
Albuminuria		33
Eclampsia		23
Ante and Post Partum Haemorrhage		35
Placenta Praevia		5
Vesicular Moles		2
Adherent Placenta		2
Hydramnios		1
Pyelitis		5
Hyperemesis Gravidarum		9
Mal Presentations		17
Retained Placenta		2
Subinvolution		4
Puerperal Insanity		4
Puerperal Sepsis		2
Incomplete Abortions		66
Ectopic Gestation		4
Contracted Pelvis		1
Threatened Abortions		8
Nephritis		2
Uraemia		1
Malaria		17
Enteric Fever		1
Mumps		1
Vesico-vaginal Fistula		1
Endometritis		1
Pulmonary Tuberculosis		3
Operations (*Major*)—		
Curettages		42
For Ectopic Gestation		4
Caesarean Section		1
Perineorraphy		1
Exploratory Laparotomy		1
Operations (*Minor*)		65
Foetal Abnormalities and Complications.—		
Umbilical Herniae		32
Hare-lip and Cleft Palate		2
Talipes		4
Epispadias		1
Ophthalmia Neonatorum		4
Extra Digits		21
Absence of Digits		1
Born with teeth		1
Hydrocephalus		1
Anencephalic Head		2
Sacro-Coccygeal Tumour		1
Haemophilia		1

The Ante Natal Clinic is proving a very useful adjunct to the Institution, and the patients are gradually realising the importance of Ante Natal Care.

Patients visits for the year ending 31st December, 1936, were, 2,259, of these, 45 Albuminuries, and 1 contracted Pelvis.

Outstanding Events of the year ending December 31st, 1936.

Lady Denham's visit of Wards for distribution of Christmas gifts on December 24th was enjoyed both by the Staff and the Patients. Lady Denham was accompanied by Mrs. Hallinan and Mrs. D'Costa.

Among the other distinguished visitors during the year were Lady Maffey, and the Countess of Harroby.

Our Annual Dinner and Dance proved a great success. Among those who attended were:—Major and Mrs. T. J. Hallinan, Hon. Dr. Lawson Gifford, Mrs. Bourne, Drs. J. M. Hall, F. W. Aris, and several other friends.

Dr. Mellad, the Visiting Surgeon, was transferred to Crofts Hill, and Dr. J. M. Stockhausen was appointed Resident Medical Officer on the 1st July, 1936.

Miss Lewis, the Matron, did not renew her Contract, and Miss McNeil-Smith the Assistant Matron was appointed Matron on the 26th August and Miss McGregor, Senior Charge Nurse, was appointed Assistant Matron.

Our thanks to the United Fruit Company for Bananas, Mrs. Orrett for infants' clothing for the poor babies, Mr. Percy Harris for Oranges, and Mr. C. C. Campbell for the loan of a Piano for the Nurses Christmas Dance.

J. M. Stockhausen,
Resident Medical Officer, Jubilee Maternity Hospital.

(C) *Report and Return of the Medical Superintendent, Lunatic Asylum.*

There were 2,064 patients in residence on the 31st day of December, 1936. Of this number 1,011 were Males and 1,053 Females. The daily average number during the year was 2,023 and the highest number requiring accommodation on any one day was 2,066. The total number of patients who received treatment during the year was 2,575.

The daily average number of patients has increased from 67 in 1935 to 71 in 1936. The female division is becoming more and more overcrowded, and it will soon be necessary to provide extra accommodation. The female and male Nursing Staffs still remain inadequate.

ADMISSIONS AND DISCHARGES.

During the year under review 574 patients were admitted—males 271, females 303, whilst 511 were discharged or died, males 247, females 264. Of the discharges 125 left the Institution as "recovered" and 126 as "relieved." 4 male patients escaped, 3 of whom were re-captured and the fourth is still at large; two female patients escaped and were re-captured. 4 patients were sent to the Public Hospital, Kingston, for major surgical operations, three of whom returned, the fourth died there. 3 infants were born, 2 were discharged to the care of their mothers and the other to the care of the Poor Law Authorities, Kingston.

The percentage of cases discharged "recovered" as based on the number of admissions during the year was 21.77, whilst that of cases discharged "relieved" similarly based was 21.77.

DEATH RATE.

241 patients died, males 129, females 112, an increase of 22 as compared with the death rate for 1935; the percentage of deaths as compared with the daily average number of patients under treatment is therefore 11.41, a slight increase in spite of the marked increase in numbers.

The principal causes of death among females were Pulmonary Tuberculosis and Cardiac Diseases; and Dementia Paralytica and Pulmonary Tuberculosis among the males. Other causes are shown in the Statistical Tables.

PRINCIPAL TYPES OF MENTAL DISORDERS ADMITTED.

Among females the Manic Depressive type still predominates and Primary Dementia is still much in evidence. Among the males Neuro Syphilitic cases including Dementia Paralytica are still common. The Manic Depressive group especially Acute Mania is one of the principal types of insanity.

PRINCIPAL CAUSES OF INSANITY.

The principal causes of insanity for the year are Heredity, Consanguinity and Syphilis. There is no doubt whatever that insufficient diet, Malaria, Pellagra and Ankylostomiasis play a considerable part as contributing causes.

SCIENTIFIC.

Autopsies were held on the bodies of 129 males and 105 females. Dr. Flahiff of the Rockefeller Foundation sill continues to attend these Post Mortem examinations and his assistance has been of considerable value.

The Wasserman and Kahn reactions resulted as follows—

	No. of cases examined.	No. of cases positive.
Males	257	58
Females	314	110

MALARIA.

Out of 354 blood films sent up for examination from female patients 73 were found positive, and out of 240 from male patients 51 were positive.

As regards Anti Malarial work oiling of stagnant pools is still being carried out.

INFECTIONS OF THE ENTERIC GROUP.

Dysentery A. and B.—Dysentery (Amoebic) has been found in 53 female patients out of 100 stools examined, and in 21 male patients out of 140 stools examined.

Yatren treatment appears to be most satisfactory.

Dysentery (Bacilliary) Males 0, Females 0.

Ankylostomiasis.—Out of 75 female cases examined, 33 positive, and out of 140 males, 31 positive.

Typhoid Group.—Out of 17 specimens from the females sent for examination 17 were positive and out of 15 males 3 were positive.

Pneumonia.—Pneumonia accounted for the death of 5 males and 7 females.

Pulmonary Tuberculosis.—Pulmonary Tuberculosis was also a prevalent cause of death—males 24, females 32.

Report from Dr. E. W. Flahiff of the Rockeferller Foundation in connection with Tuberculosis.

The routine intracutaneous tuberculin tests were continued as usual during the year on newly admitted patients. 452 patients received tuberculin tests. Of these 336 reacted positively to tuberculin. 116 patients were negative to tuberculin. Of this negative group, 52 received intracutaneous vaccinations with heat killed tubercle bacilli. These vaccinations were intended to produce immunity against tuberculosis. 53 were controls for this vaccinated group. 4 of the negative individuals were not suitable for either group. The remaining 7 negative individuals represented 2 re-admitted vaccinated cases and 5 re-admitted controls. Repeated tuberculin tests, every three months, have been done on all old and new vaccinated and control cases, to observe any change in their tuberculin reaction.

The attempt has been continued to take chest x-rays of all new admissions who were not too excited. During the year 485 admissions were x-rayed among whom 12 cases of open tuberculosis and 32 latent lesions were found. This ensured early isolation of the infected individuals. A further group of 424 old patients received a total of 862 x-ray examinations for one of three reasons: (1) by the request of members of the medical staff; (2) because earlier x-rays were suspicious; or (3) because they were in the vaccinated or control groups. These latter two groups are being closely followed to learn whether or not they are in more danger of infection than the tuberculin positive admissions.

Autopsies have been done on as many cases as possible who have died in the institution. 211 pairs of lungs were obtained during the year for x-ray study and careful post mortem dissection.

This work has progressed most favourably during the year and it has been possible to tuberculin test and x-ray a very good percentage of the new admissions.

New Works and Repairs.

During the year a new ward in the Female Division (C. 3) which had been commenced in 1935 was completed; this provided accommodation for 54 beds.

A new ward to accommodate 20 additional beds was built in the Female Division between "G" Court and the Dining Shed.

An extension was made to "F" Ward Female Private Patients to accommodate 10 additional beds.

A new ward (N. 2) was erected in the Male Division, this was connected to the existing "N" Ward and a new Court Yard was formed; additional accommodation for beds was thus provided.

"N" Ward Male Division was reconditioned, the 75 partitions of all cubicles were removed thus providing an open dormitory which increased accommodation in this Ward by 26 beds.

"C" Ward and "F" Range Male Division were similarly done and the accommodation increased by 16 and 8 beds respectively.

An additional bed room was erected at the Medical Superintendent's Quarters and also one at the Assistant Matron's Residence.

An old culvert which is situated near the Matron's Quarters and across the road leading to Belle Vue was demolished and a larger culvert was constructed. This has removed an unstatisfactory condition which had existed for years; the old culvert was too small to carry the flood water in the gully and the result was that the area above was frequently flooded.

The gully which runs from the Windward Road through the Asylum grounds to the sea was paved for its entire length and necessary bank protection was made where erosion takes place. This work has removed an insanitary condition which was created by sullage and flood water which are discharged from premises in Newton Square and the Windward Road.

A concrete culvert was built from the new male ward (N. 2) to connect it to the gully on the east.

The shingled roofs of the following buildings which were in bad order were reconstructed and replaced by a covering of corrugated iron sheets.

The Foul Laundry and latrines in that compound.

The Dining Hall in "B" Ward Female Division.

The "C" and "D" wards Female Division.

The Eastern portion of the verandah of "E" Ward Female Division.

The Annex was thoroughly repaired and painted.

The roof of the Chief Attendant's Quarters was reconditioned, and the building which was in a very bad condition was thoroughly repaired and painted.

The Quarters of the Deputy Attendant were similarly treated.

The steel roof over the large shed of the male Dining Hall was painted.

An additional absorption pit was constructed to relieve the existing pits from the septic tank in the Female Division. These were not functioning properly and as a result, this system, which was provided some years ago to relieve the main system, could not be used continuously. Conditions are now greatly improved.

One large manhole over the main sewer was constructed thus making easier access for clearing chokes.

The obsolete trough system in the latrines at the Foul Laundry was demolished and modern sanitary fixtures installed.

A great deal of pointing, patching, painting, repairs to gutters and other minor repairs were done throughout the Institution during the year. The Public Works Department were assisted in this by Asylum labour. While a great deal of repair work remains to be done conditions are now improved, largely as the result of a vote to the Public Works Department for Special Repairs.

Water Supply and Sanitation.

Conditions in the sewerage system have improved slightly as a result of minor work which has been done, but the system on the whole is unsatisfactory for four reasons:

(1) That the Hospital has increased to such an extent that the present sewers cannot possibly deal with the sewerage of an institution of this nature, this because patients will insist upon, this in spite of all observation, putting every possible imaginable article into the sewer which causes chokes.

(2) The main outfall into the Kingston sewers cannot be regraded until such time as the Kingston and St. Andrew Corporation enlarge their sewers.

(3) In many parts of the Asylum the fall in the sewers is infinitesimal.

(4) The present supply of water is inadequate to cope with the increased sanitary conveniences improved during the past five years. The result is during the day, particularly when a large amount of water is

being used for all purposes, the pressure is so low that the water closets can hardly be flushed. An increase in the size of the distributing mains is highly necessary and should be allowed without the least possible delay.

All the above factors result in frequent choking of the main sewer.

Farm and Grounds.

The produce from farm and gardens has again fallen short of expectations in tonnage although there is a slight increase in value over 1935. This falling off has been due to adverse conditions, the interest in these activities have been maintained during the year.

In 1935 approximately thirteen tons of vegetables and fruits were produced as against approximately ten tons in 1936 at a value of £173 approximately.

The sheep continue to prove profitable, the number remaining on 31st December being 289 head, and returns from the Poultry Farm have been encouraging —164½ dozen eggs having been obtained.

The gross value derived from farm and gardens including manure and divi divi amounted to £203 10s. 10d. as against £260 19s. 7d. for the year 1935. Of this amount £20 1s. 0d. was credited to General Revenue, £10 7s. 3d. to Patients' Fund and the balance of £173 2s. 7d. represented the value of products included in the diet during the year.

The following sums were paid to the Institution for work done—

(a) For Laundry Work for the Public Hospital, Kingston ..	£110 12 10
(b) For making Straw brooms for above	1 2 10

£50 5s. 10d. of the amount paid for Laundry Services was lodged to the credit of Miscellaneous Revenue, and £60 7s. 0d. was lodged to the credit of the Patients' Fund.

Board of Visitors.

Three meetings of the Board of Visitors were held during the year, one meeting falling through for want of a quorum. The Laws relating to the Institution have not been amended as was anticipated when the last annual report was submitted. Several routine matters were dealt with by the Board, chiefly in connection with the Subordinate Staff.

The death of Hon. A. E. DaCosta, O.B.E. is much regretted. The vacancy created has not yet been filled.

Visits were paid to the Institution by Very Rev. Father Kelly, S.J., Mr. V. C. Alexander, J.P., Mrs. J. B. Stiven and Dr. Joyce Saward, Members of the Board.

Committee of Enquiry.

A Committee of Enquiry met during the year in connection with certain matters connected with the working of the Institution.

Visits.

His Excellency the Governor and Lady Denham visited the Institution on December 24th and their visit and gifts of cigarettes and candies were much appreciated by the Staff and Patients.

Visits were paid by Mr. F. L. Brown, Assistant Colonial Secretary, Mr. J. B. Sidebottom of the Colonial Office, London, Mrs. Neville Rolfe and the Lord Bishop of Jamaica. They all expressed appreciation of the work which is being done. The Director of Medical Services, Hon. Major T. J. Hallinan, C.B.E., paid several visits to the Institution.

Church Services.

The usual Church Services have been held weekly during the year.

Attendance—	Church of England	150 males	152 females.
	Roman Catholic	20 males	26 females.

Frequent visits are paid to the patients in Wards by a priest of the Roman Catholic faith.

Amusement of Patients.

Cricket, Football and Bowls have been the main outdoor amusement for patients during the year, and have been greatly appreciated.

It was not convenient to hold the Annual Sports during the year. Several concerts were, however, arranged and were enjoyed by many of the patients. Music has also been provided on holidays and the patients indulged in dancing.

I have to record appreciation for gifts of papers, magazines and other articles supplied by friends of the Institution.

The Combined Medical C. C. were again fortunate in winning the Junior Cricket Cup, thus gaining possession for two years in succession. The team was, however, not as fortunate in the Inter-Department Knock-out Competition.

Employment of Patients.

Female patients usefully employed, totalled 618. Of these 358 were occupied in the Laundry Sewing Room, Kitchen Gardening and the picking of coir for mattress making. The remainder were employed in the Wards.

Male patients employed, totalled 560, of these 250 attended to farm gardens and grounds, 50 assisted in trades and 260 as messengers and porters and assisted in domestic duties.

STAFF.

For a portion of the year the Institution was without the services of one Medical Officer, Dr. C. H. Tomlinson having been seconded for service elsewhere on 1st April. No appointment was made until September, when Dr. J. F. B. Sanguinetti joined the Staff.

The Medical Superintendent was granted six weeks leave of absence in July.

Miss H. J. Tyler, Matron, was granted fourteen weeks leave of absence.

Mr. V. A. Isaacs, Second Class Clerk, was granted three months leave of absence.

Mr. I. A. Jervis, Assistant, was granted eight weeks leave of absence.

The office of Clerk and Purveyor was filled by the appointment of Mr. W. E. Watson of the Department of Science and Agriculture.

Mr. O. G. Miller assumed duties as Dispenser on 8th January, 1936.

SUBORDINATE STAFF.

The Subordinate Staff has worked well but it must be again pointed out that the present number is inadequate to cope satisfactorily with the ever increasing number of patients.

Due to illness and other causes there was no examination in Mental Nursing, although lectures and training were given during the year.

Three Male Attendants retired from the Service and four were discharged.

Two nurses retired, two resigned, one was passed as medically unfit, one died in the Public General Hospital, and two were dismissed.

The Staff Amusement Club functioned during the year and carried out two successfull dances in addition to two pleasant outings to Dunns River.

The Thrift Club has again been of great help to those who joined and the return of the year was around 3%.

The usual Statutory Statistical Tables follow:

JAMAICA LUNATIC ASYLUM.

Population return 31st December, 1936.

	Males.	Females.	Total.	Males.	Females.	Total.
Remaining 31st December, 1935 ..	..	..	..	980	1,010	1,990
Admitted during 1936	271	303	574	..	..	..
Born 1936	3	..	3	..	..	..
Captured during 1936 ..	3	2	5	..	..	..
Returned from Public Hospital ..	1	2	3	278	307	585
Total under care, 1936 ..	..	..	..	1,258	1,317	2,575
Discharged—recovered ..	65	60	125	..	..	..
" relieved ..	40	85	125	..	..	..
" not improved ..	1	3	4	..	..	..
" not insane ..	3	..	3	..	..	..
Escaped	4	2	6	..	..	..
Infants died	..	..	..	..	..	..
" discharged	3	..	3	..	..	..
Patients died	129	112	241	..	..	..
Sent to Public Hospital* ..	2	2	4	..	..	..
Total discharged and died ..	..	..	..	247	264	511
Remaining 31st December, 1936 ..	..	..	..	1,011	1,053	2,064

*1 male patient died at the Public Hospital.

Table I.—Showing the actual Admissions, Re-admissions, Discharges and Deaths during the Calendar Year ended 31st December, 1936.

	Males.	Females.	Total.	Males.	Females.	Total.
In Asylum, 1st January, 1936 . .	. .	. .	. .	980	1,010	1,990
Cases admitted—						
First admissions	220	205	425	. .	. .	. .
Not First admissions . .	51	98	149	. .	. .	. .
Captured	3	2	5	. .	. .	. .
Returned from Pub. Hospital . .	1	2	3	. .		. .
Born	3	. .	3	. .	. .	. .
Total cases admitted during the year	. .	. .	. .	278	307	585
Total cases under care during the year	. .	. .	. .	1,258	1,317	2,575
Cases discharged—						
Recovered	65	60	125	. .	. .	. .
Relieved	40	85	125	. .	. .	. .
Not Insane	3	. .	3	. .	. .	. .
Not improved	1	3	4	. .	. .	. .
Escaped*	4	2	6	. .	. .	. .
Died	129	112	241	. .	. .	. .
Sent to Public Hospital for surgical treatment . . .	2	2	4	. .	. .	. .
Infants died	. .	. .	. .	. .	. .	. .
Infants discharged	3	. .	3	. .	. .	. .
Total discharged and died during year	. .	. .	. .	247	264	511
Remaining in Asylum 31st December, 1936	. .	. .	. .	1,011	1,053	2,064
Average number resident during the year	. .	. .	. .	1,002	1,021	2,023

*1 male patient still at large.

Table Ia.—Showing the number of previous attacks among those admitted during the Calendar Year 1936, distinguishing those attacks that have been treated to recovery and discharged.

Number of previous Attacks.	Having had previous Attacks.					
	All Attacks.			Attacks followed by Discharge or Recovery.		
	Males.	Females.	Total.	Males.	Females.	Total.
Have had 1 previous attack . .	37	59	96	20	38	58
Have had 2 previous attacks . .	2	17	19	5	11	16
Have had 3 previous attacks . .	3	4	7	. .	8	8
Have had 4 previous attacks . .	1	12	13	. .	. .	. .
Have had more than 5 attacks . .	1	. .	1	. .	5	5
Unknown	. .	6	6	. .	7	7
	44	98	142	25	69	94

Table II.—Showing the Causes of Deaths among Male Patients during the Calendar Year, 1936, with the ages at Death.

—	Under 20	20 and under 30	30 and under 40	40 and under 50	50 and under 60	60 and under 70	70 and over	Total.
	M	M	M	M	M	M	M	M
Chronic Brain Disease	. . .	. .	2	. .	1	1	. .	4
Cerebral Haemorrhage	. .	. .	. .	1	. .	. .	. .	1
Peritonitis	. .	. .	. .	1	. .	. .	. .	1
Status Epilepticus	. .	2	. .	. .	. .	. .	. .	2
General Paralysis	. .	2	5	13	11	1	. .	32
Acute Ulcerative Colitis	. .	2	1	2	1	. .	. .	6
Intestinal Obstruction	. .	1	. .	. .	. .	. .	. .	1
Chronic Ulcerative Colitis	. .	. .	2	. .	. .	. .	. .	2
Entero-Colitis	. .	3	. .	1	1	. .	. .	5
Syphilis	. .	1	2	. .	. .	. .	. .	3
Pulmonary Tuberculosis	1	5	5	2	2	. .	. .	15
General Tuberculosis	1	4	2	1	1	. .	. .	9
Encephalitis	1	. .	. .	. .	. .	. .	. .	1
Chronic Heart Disease	. .	. .	2	3	1	2	2	10
Dysentery, Amoebic	. .	1	5	2	1	1	. .	10
Acute Pericarditis	. .	. .	1	. .	. .	. .	. .	1
Chronic Nephritis	. .	. .	1	. .	. .	2	. .	3
Pneumonia	. .	. .	. .	4	. .	. .	1	5
Aortic Incompetency	. .	. .	. .	. .	. .	. .	. .	. .
Senile Decay	. .	. .	. .	. .	. .	3	5	8
Acute Nephritis	. .	1	1	. .	. .	. .	. .	2
Acute Cerebritis	. .	2	2	2	. .	. .	. .	6
Septicaemia and Pyaemia	. .	1	. .	. .	. .	1	. .	2
								129

Table II.—Showing the Causes of Deaths among Female Patients during the Calendar Year, 1936, with the ages at Death.

—	Under 20	20 and under 30	30 and under 40	40 and under 50	50 and under 60	60 and under 70	70 and over.	Total.
	F.	F.	F.	F.	F.	F.	F.	F.
Chronic Brain Disease	. .	1	1	1	. .	. .	. .	3
Cerebral Haemorrhage	. .	1	. .	. .	. .	. .	. .	1
Maniacal Exhaustion	. .	1	1	. .	. .	. .	. .	2
Typhoid Fever	. .	1	. .	. .	. .	1	. .	2
Gen. Paralysis of the Insane	. .	. .	3	1	. .	1	. .	5
Dysentery	. .	1	. .	1	. .	2	. .	4
Ankylostomiasis	. .	3	. .	1	. .	. .	. .	4
Pellagra	. .	1	4	. .	1	. .	. .	6
Pulmonary Tuberculosis	1	11	8	3	2	. .	2	27
Tuberculosis, other forms	. .	1	1	1	2	. .	. .	5
Syphilis	1	. .	. .	. .	. .	. .	. .	1
Pneumonia	. .	. .	. .	1	2	4	. .	7
Diseases of the Circulatory System	. .	. .	10	3	5	1	3	22
Disease of the Urinary System	. .	1	3	. .	. .	. .	. .	4
Cirrhosis of Liver	. .	. .	. .	. .	. .	1	. .	1
Senile Decay	. .	. .	. .	. .	. .	2	3	5
Septicaemia and Pyaemia	. .	1	. .	1	1	1	. .	4
Acute Entero-Colitis	. .	2	1	. .	. .	. .	. .	3
Intestinal Obstruction	. .	. .	. .	. .	1	. .	. .	1
Abscess of Lung	. .	1	2	. .	. .	. .	. .	3
Carcinoma of Pancreas	. .	. .	. .	1	. .	. .	. .	1
Chronic Ulcerative Colitis	. .	. .	. .	. .	1	. .	. .	1
								112

Table III.—Showing the duration of the Disorder on Admission in the Admissions, Discharges and Deaths during the Calendar Year ended 31st December, 1936.

Class.	Admission.			Discharges.						Deaths.		
				Recovered.			Relieved or otherwise.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
First Class—First attack, and within 3 months on admission	124	134	258	18	36	54	. .	49	49	24	60	84
Second Class—First attack, above 3 and within 12 months on admission	53	19	72	20	15	35	1	27	28	14	20	34
Third Class—Not first attack and within 12 months, etc.	38	136	174	2	8	10	4	7	11	. .	21	21
Fourth Class—First attack or not, but of more than 12 months on admission	36	8	44	. .	. .	. .	. .	. .	. .	. .	3	3
Fifth Class—Congenital	5	. .	5	. .	. .	. .	. .	. .	. .	. .	3	3
Unknown	15	6	21	. .	1	1	. .	2	2	. .	5	5
Total . .	271	303	574	40	60	100	5	85	90	38	112	150

Table IV.—Showing the probable Causes of the Insanity in the Patients admitted during the Calendar Year ended 31st December, 1936.

Cause of Insanity.	Number of instance in which each Cause was assigned.											
	Number of Cases. Admissions—Males 271, Females 303—Total 574.											
	As pre-disposing Cause.			As exciting Cause.			As pre-disposing or exciting where these could not be distinguished.			Grand Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Moral—												
Domestic trouble (including loss of relatives and friends	4	. .	4	. .	. .	. .	. .	. .	. .	4	. .	4
Adverse circumstances (including business anxieties and pecuniary difficulties) . .	5	4	9	. .	. .	. .	. .	. .	. .	5	4	9
Mental anxiety and worry (not included under above 2 heads) and overwork	4	. .	4	. .	. .	. .	. .	. .	. .	4	. .	4
Religious excitement	14	20	34	. .	. .	. .	. .	. .	. .	14	20	34
Love affairs (including seduction) . .	. .	1	1	. .	. .	. .	. .	. .	. .	. .	1	1
Physical—												
Intemperance in drink	7	2	9	. .	. .	. .	. .	. .	. .	7	2	9
Accident or Injury	. .	1	1	. .	. .	. .	. .	. .	. .	. .	1	1
Traumatism	7	. .	7	. .	. .	. .	. .	. .	. .	7	. .	7
Other bodily disease	. .	64	64	. .	. .	. .	. .	. .	. .	. .	64	64
Previous attacks	44	. .	44	. .	. .	. .	. .	. .	. .	44	. .	44
Heredity influence	58	. .	58	. .	. .	. .	. .	. .	. .	58	. .	58
Adolescence	. .	48	48	. .	. .	. .	. .	. .	. .	. .	48	48
Epilepsy	. .	. .	. .	20	. .	20	49	10	59	69	10	79
Syphilis	28	. .	28	. .	. .	. .	. .	53	53	28	53	81
Not known	. .	. .	. .	. .	. .	. .	. .	85	85	. .	85	85
Senility	9	. .	9	. .	. .	. .	. .	. .	. .	9	. .	9
Ganja Smoking	12	. .	12	. .	. .	. .	. .	. .	. .	12	. .	12
Tubercular Disease	. .	. .	. .	. .	. .	. .	. .	15	15	. .	15	15
Fevers	1	. .	1	. .	. .	. .	. .	. .	. .	1	. .	1
Congenital defect ascertained	9	. .	9	. .	. .	. .	. .	. .	. .	9	. .	9
										271	303	574

Table V.—Showing the form of Mental Disorders in the Admissions, Recoveries and Deaths during the year and the form of Mental Disorders of the Inmates on 31st December, 1936.

Form of Mental Disorders.	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
I. Congenital or Infantile Mental Deficiency												
With Epilepsy	3	4	7	..	..	..	..	..	..	18	9	27
Without Epilepsy	..	4	4	..	..	..	..	1	1	..	..	..
II Insanity occurring later in life—												
Insanity with Epilepsy	24	..	24	..	2	2	..	3	3	97	28	125
General Paralysis of Insane	26	4	30	..	..	..	29	3	32	59	4	63
Insanity with grosser brain lesions	7	..	7	..	..	..	..	..	..	..	..	..
Confusional Insanity	25	15	40	16	14	30	10	1	11	51	4	55
Mania—												
Acute	74	63	137	51	22	73	25	28	53	234	234	468
Chronic	4	..	4	..	1	1	12	25	37	360	201	561
Recurrent	47	59	106	18	4	22	19	5	24	38	129	167
Depressive Psychosis	..	..	..	..	..	..	..	11	11	..	..	..
Puerperal	..	..	..	..	1	1	..	..	..	..	..	..
Senile	..	..	..	..	1	1	..	..	..	..	..	..
Melancholia—												
Recent	5	12	17	..	2	2	10	..	10	11	10	21
Chronic	..	..	..	..	2	2	..	8	8	..	2	2
Recurrent	..	..	..	..	..	..	..	..	..	36	..	36
Alternating Insanity	10	41	51	6	6	12	..	..	..	20	78	98
Delusional Insanity	16	..	16	10	..	10	8	1	9	14	62	76
Chronic Alcoholic	..	..	..	..	1	1	..	..	..	..	..	..
Epilepsy Acquired	..	18	18	..	2	2	..	..	..	..	35	35
Dementia—												
Senile	3	..	3	..	..	..	11	13	24	54	61	115
Secondary or Terminal	7	17	24	..	..	..	..	..	..	..	65	65
Praecox	20	66	86	8	2	10	5	13	18	12	129	141
Psychoneurosis	..	..	..	..	..	..	..	..	..	5	1	6
Psychasthenia	..	..	..	..	..	..	..	..	..	2	1	3
Total	271	303	574	109	60	169	129	112	241	1011	1053	2064

Financial Statement.

Table VI.—Cost of Maintenance for the Calendar Year, 1936.

	£	s.	d.
Salaries	5,245	17	2
Wages	17,542	4	8
Religious Services	60	0	0
Dietary	14,321	0	5
Uniform for Nurses and Servants	573	7	11
Furniture and Utensils	445	3	4
Clothing and Bedding	2,765	0	11
Drugs and Medical Appliances	252	6	5
Funeral Expenses	158	8	6
Travelling Expenses of Discharged Lunatics	91	14	6
Farm and Grounds and Repairs	355	17	10
Rent of Telephones	97	15	11
Washing and Sanitary Arrangements	390	19	0
Fuel and Lighting and Power	890	18	6
Water Rates*	251	10	0
Miscellaneous	198	11	7
Stationery	..		
	43,640	16	8

Less Reimbursements.

	£	s.	d.	£	s.	d.
Contributing Patients	3,041	15	1	..		
Miscellaneous Revenue	128	18	10¼	3,170	13	11¼
Net cost to General Revenue				40,470	2	8¾

*The amount is for 6 months, subsequent payments being made by Island Treasurer.

(B) Return showing Cost per occupied Bed for year ended 31.12.36.

	Average No. of Beds.	Cost of Staff.	Other Charges.	Total.	Cost per occupied bed per annum.	
					Staff.	Other Charges.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Lunatic Asylum	2,023	22,848 1 10	20,792 14 10	43,640 16 8	11 5 10	10 5 7

J. J. Cameron,
Actg. Medical Superintendent, Lunatic Asylum.

(D) Return of Diseases and Deaths in Public General Hospitals (outside Kingston) for 1936.

Diseases.	Cases Treated.	Deaths.	Out-patients.
Chicken Pox	4	..	28
Diphtheria	2	..	1
Epidemic Diarrhoea	3	..	3
Dysentery—			
(a) Amoebic	28	2	31
(b) Bacillary	7	..	1
(c) Unclassified	20	..	18
Erysipelas	4	..	4
Enteric Fevers	723	150	56
Gonococcal Infections	1,099	2	3,441
Influenza	120	2	570
Leprosy	1	..	7
Malaria—			
Tertian	2,381	71	13,329
Quartan	43	6	242
Aestivo-atumn	186	25	799
Cerebral (cachexia)	14	8	2
Blackwater	14	3	4
Undefined	..	..	..
Measles	..	..	1
Poliomyelitis	1	..	..
Cerebro-Spinal-Meningitis	..	...	..
Mumps	9	..	40
Scarlet Fever	2	..	..
Soft Chancre	70	..	270
Syphilis—			
Primary	213	2	1,419
(b) Secondary	100	3	2,379
(c) Tertiary	435	25	4,032
(d) Congenital	51	9	975
(e) Period not indicated (Unclassified)	273	1	187
Septicaemia	26	8	4
Tuberculosis—			
Pulmonary	246	34	360
Other Forms	67	9	47
Tetanus	26	9	8
Whooping Cough	30	..	51
Yaws	67	..	10,629
Alcoholism	6	..	2
Anaemias	176	7	729
Diabetes	87	11	60
Pellagra	4	..	25
Rheumatism—			
Acute	130	..	1,080
Chronic	199	..	1,845
Rickets	3	..	28
Tumours—			
Malignant	192	27	122
Non Malignant	90	..	135

Diseases.	Cases Treated.	Deaths.	Out-patients.
Diseases of the Ductless Glands	44	8	124
Do. Nervous System	416	48	1,988
Do. Eye	379	. .	1,801
Do. Ear	51	. .	520
Do. Circulatory System	609	106	993
Do. Lymphatic System	297	9	766
Do. Respiratory System	1,108	155	2,576
Do. Digestive System	2,992	133	11,563
Do. Spleen	30	. .	196
Do. Breast	83	. .	129
Parasites	213	18	3,351
Diseases of the Genito-Urinary System (non-Venereal)	2,634	149	5,443
Do. Skin and Cellular Tissues	987	15	3,233
Do. Puerperal State	695	44	439
Do. Bones and Organs of Locomotion	289	6	1,345
Malformations	8	. .	5
Diseases of Infancy	35	8	109
Diseases of Old Age	18	3	131
Poisons	88	13	45
Diseases produced by external causes	4,618	51	12,778
Ill-defined Diseases	81	3	351
Other General Diseases	163	3	826
No Diseases	23	. .	61
Malingering	8	. .	28
	23,021	1,196	91,765

(E) Return of Surgical Operations, Public General Hospitals (excluding Kingston), 1936.

	Totals.
I. Operations upon Female Genital Organs—	
Salpingectomy	262
Draining Pyosalpinx	12
Oophorectomy	69
Ovariotomy	57
Ovarian Cysts	32
Salpingo-oophorectomy	118
Broad Ligament cysts	6
Myomectomy	19
Sub-total Hysterectomy	92
Total Hysterectomy	43
Caesarian Section	4
Uterine Suspension	35
Curettage	276
Dilation of cervix	44
Extra uterine gestation	22
Repair of Vagina	14
Excision of hymen	3
Excision of labial growths	5
Haematocolpos	. .
Induction of abortion	8
Perineorrhaphy	9
Draining pelvic abscess	8
Cervical polypus	15
II.—Parturition—	
Instrumental Delivery	55
Caesarean Section	5
Craniotomy	6
Induction of Labour	15
Removal placenta	1
Ectopic gestation	12
III. Operations on Herniae—	
Radical cure—Inguinal	282
Femoral	2
Strangulated hernia	32
Obstructed hernia	2
Umbilical hernia	7
Ventral hernia	5
IV. Operations for Appendicitis—	
Appendicectomy	996
Appendix abscess	17

	Totals.
V. Operations upon the Stomach and Intestines—	
Perforation of gastric ulcer	2
Perforation of duodenal ulcer	3
Suturing peritoneal wound	1
Colostomy	3
Intestinal obstruction	25
Laparotomy	44
Gastro-enterostomy	33
Intussusception	7
Paracentesis abdominis	4
Laparotomy for tubercular peritonitis	7
Lateral anastomosis	7
Cholecystectomy	17
VI. Operations on the Bladder—	1
Supra pubic cystotomy	45
Cystoscopy	4
External Urethrotomy	1
Excision of malignant growth	..
Vesical calculis	3
VII. Operations upon the Urethra and Penis—	
Dilating urethral stricture	319
Circumcisions	345
Amputation of penis	21
Reduction of para phymosis	47
VIII. Operations on the Scrotum and Testicle—	
Radical cure of hydrocele	56
Orchidectomy	30
Scrotal Testula	2
IX. Operations on the Anus and Rectum—	
Anal fistulae	18
Haemorhoidectomy	39
Dilating rectal stricture	18
X. Amputations	146
XI. Operations upon the Ear—	
Radical cure for mastoid	8
Conservative operation for mastoid	7
XII. Operations on the Nose, etc.—	
Removal of adenoids	133
Tonsillectomy	538
Nasal Polyp.	23
Quinsy— incision for	25
XIII. Tracheotomy	5
XIV. Operations on the Thorax—	
Amputation of breast for malignancy	32
Adenoma of breast	8
Empyema	8
XV. Operations on Tendons—	
Suturing tendons	73
Tenotomy	1
XVI. Operations on Antrum and Frontal Sinus	14
XVII. Ophthalmic Operations—	
Extraction of cataract	15
Needling cataract	16
Enucleation of eyeball	37
Iridectomy	4
Meibomian cysts	19
Pterygium	19
Lachrymal apparatus	1
XVIII. Operations on Affections of Bones—	
Osteomyelitis	34
Sequestrotomy	41
XIX. Dislocations	89
XX. Fractures of Bones—	
Plating femur	78
Bone Grafting	1
Wiring fractures	32
Depressed fracture of frontal bone	5
Depressed fracture of molar bone	1
Osteotomy	45
XXI. Excision of Glands—	
Cervical	5
Axillary	..
Inguinal	166
XXII. Operations upon the Thyroid Gland	16

	Totals.
XXIII. Operation upon the Liver and Gall Bladder	
Lapatotomy for ruptured liver	6
Draining gall bladder	2
XXIV. Incision of Abscess	1,296
Suturing wounds	1,066
Removal of foreign bodies (bullets, needles, etc.)	122
Examinations	102
Scraping ulcers	140
Dental extractions	1,030
Excision of ganglion	7
Excision of toe nail	110
Excision of Lipoma	26
Excision of keloid	13
Excision of epulis	4
Breaking down adhesions	26
Skin graft	22
Excision of tubercular glands	4
Excision of Bursae	7
Excision of Carbuncle	28
Amputation of supernumerary digits	24
Sebaceous Cysts	32
Venesectomy	1
Operation for Hare lip	2
Plastic operation for contractures of arm	1
Phrenicectomy	24
Bronchoscopy	8
Turbinectomy	1
Sigmoidoscopy	5
Trephining for cerebral compression	5
Excision of fibroma	15
Cauterisation of warts, sinuses, etc.	199
Closing pneumo-thorax	4
XXV. Miscellaneous	209
XXVI. Other minor operations	584
	10,282

(F) *Report and Returns of the Medical Attendant to Lepers's Home.*

1. The Staff consists of:—

(1) Superintendent
(2) Matron
(3) 4 Nurses (untrained)
(4) 2 Cooks
(5) 1 Messenger

I desire to commend the staff for the manner in which they have discharged their duties, which is often of an arduous and unpleasant nature.

The addition of a trained nurse to the staff is very desirable for the more efficient working of the Institution.

The general health of the inmates was fairly satisfactory. There was no appreciable increase, season or otherwise, of intercurrent disorders.

There were 38 new admissions during the year, 21 males and 17 females, all advanced cases. Fifteen deaths occurred, 8 males and 7 females. Three patients were discharged, one male and two females, all giving evidence of the disease having been arrested, and reported on by the Bacteriologist as being free from B Lepra in the tissues.

The daily average number in the Home during the year was 155 as against 139 in 1935, an increase of 16.

Overcrowding still obtains in the female division. It is to be hoped that it will be found possible to provide additional accommodation during the current year.

Routine treatment with the preparations of Chaulmoogra and the Hydnocarpus oils was carried out by oral administration and intramuscular injections. The preparation called E.C.C.O. composed of Ethyl Esters of Hydnocarpus Wightiana, pure Creosote, Camphor and Olive Oil has been largely used intramuscularly. This preparation has the advantage of being relatively painless, but because of intermittency of treatment, due to the irregularity with which the patients present themselves for injections, it is almost impossible to estimate the relative value of E.C.C.O. as compared with Moogral, the Ethyl Ester of Chaulmoogra Oil which is alternatively used.

The male inmates especially, have a decided objection to treatment by injections, and refuse to present themselves when called upon for treatment by this route.

The oral administration of tablets of Sodium Gynocardate and capsules of Moogral is usually well accepted, and within limits evidence of improvement in selected cases is observed from time to time.

The diet scale is adhered to, and its adequacy is reflected in the well nourished appearance of the majority of the inmates.

Religious administrations are attended to regularly by respresentatives of the Anglican, and Roman Catholic denominations, also by the Salvation Army and the Seventh Day Adventist. Miss Marven has continued to be a devoted visitor to the Home, and has given tangible expression in her abiding interest in the welfare of the inmates, by the frequency of her visits, the words of good cheer she invariably utters, and the good gifts that she brings to be distributed among them.

Recreation—Croquet, cricket, dominoes, and draughts were the principal games engaged in during the year. A few of the inmates have recently taken up tennis and a grass court now being made is near completion. A gramaphone, a concertina, drum, guitar and other musical instruments provide additional entertainment.

The Library is still maintained. It is a fact, however, that owing to the low standard of literacy, the acquisition of new books is largely superfluous, less than 5% of the inmates avail themselves of the facilities of the library.

Occupation—The farm is still being well worked by those who have been alloted plots for cultivation. The farm is now far too small, as there are lots of men without plots, who are able and willing to cultivate. The acquisition of adjacent lands, for extension of the farm is a prime essential, and steps should be taken to carry it out as soon as possible. The products of the farm are bought from the workers, for use in the Institution at ruling contract prices.

The washing of soiled linen etc., is all performed by the female inmates.

There has been marked improvement in the discipline of the inmates during the year under review. Breaches of the rules had been dealt with according to regulations. The tendency to stray from the home, hitherto complained of, now hardly exists, and an air of general content and cheerfulness is apparent, and has been remarked on by visitors to the institution.

The buildings still present a ramshackle appearance, with the exception of the female infirmary which was recently repaired and painted. The other structures are all in need of general repairs and painting.

A canteen was recently added to the recreation room and adds much to the convenience and comfort of the inmates.

Again our thanks are due to Miss Marven who was largely instrumental in providing the means for obtaining this facility.

The method of sewage disposal remains the same, namely a bucket-dry earth system. It is most desirable that the W. C. system be installed. Drainage is carried out by means of open concrete drains, nearly all these are in bad order and need repairs or replacements.

H. H. Blair,
Medical Attendant.

VI.—PRISONS.

Reports of the Medical Officers of Prisons.

General Penitentiary, Kingston.

During the period under review the sanitary condition of the institution was maintained in a satisfactory state. It was for a long time suspected that the prisoners were drinking water from the wells which are used for washing purposes. Samples of this water on examination showed gross contamination. An accessory tank was put in at the pumping plant and treatment of the water with Bleaching Powder instituted in September. The result at the end of the year showed a marked decrease in the incidence of Dysentery and Bowel complaints previously found among the yard parties.

Health of the Prisoners.—Two prisoners were transferred during the year to the Public Hospital for Major Operations which were successful in both cases. Eight were transferred to the Lunatic Asylum. There were eight deaths. With thanks to the Government Bacteriologist it was possible to institute routine Serum, Blood and Faeces examinations from May. Of 474 Kahn Reactions 250 were positive, of 474 Blood Examinations for Malarial Parasites 79 were positive, and of 474 stools examined 331 were positive for Hookworm. All of whom are being treated accordingly as a routine.

Health of the Staff—Among the members of the staff 355 cases of illness were treated including 57 visits to them in quarters or in their own homes.

Mr. J. A. Stewart, Dispenser for 35 years retired on 31st July, 1936, with a record of good service.

Mr. E. A. Stewart was transferred from the Public General Hospital, Black River to succeed Mr. J. A. Stewart.

Return of Medical Statistics for the General Penitentiary, Kingston, during the year ended 31st December, 1936.

Number in custody 1.1.36	662
Admitted during the year	1,046
Discharged during the year	1,085
Daily average in custody	658
Removal to Hospital for Major Operations	2
Removal to Mental Hospital	8
Greatest number in Hospital on any one day	50
Deaths	8
Daily average in Hospital	36
Major Operations	3
Minor Operations	60
Vaccinations performed	515
Salvarsan Injections	326
Bismuth Injections	122

R. H. Davidson,
Surgeon.

ST. CATHERINE DISTRICT PRISON.

State of Prison.—The sanitary condition of the wards, Hospital, Officers' Quarters and compounds were maintained in a satisfactory manner.

Health of Prisoners.—Forty-two prisoners were admitted in poor health. The total number admitted to Prison was 3,542. The total number admitted to Hospital was 905, most of the cases were Malaria fever as usual. There were 422 cases of Malaria treated in the Hospital, nearly 50% of the total admissions.

Blood smears were submitted from 108 prisoners on admission to Prison during the months of July and August of 1936, and reports from the Bacteriologist showed that 54 were positive for malaria parasites. It is evident then, that infection is not necessarily acquired during the term of imprisonment here. It is safe to say that the majority on arrival, are already infected, requiring only a lowering of vital resistance as from a chill, etc., to precipitate an outbreak of fever.

There were seven deaths during the year from natural causes—two from typhoid acquired before admission to prison, one from chronic cardiac disease, one from cerebral apoplexy, one from defuses peritonitis, one from chronic cysticis and one from syphilitic paraplegia.

There were five executions carried out during the year in accordance with the provisions of the Law.

Health of Officers.—Seventy-three officers fell sick and were treated during the year, the majority of them for malaria as usual. Two Officers retired from the service having reached the age limit, and one was passed out as physically unfit to continue in the service.

Recommendations.—It is recommended that quarters No. 5 Burke Road, occupied by one of the Principal Warders be screened against mosquitoes. This section of the town is definitely malarious and the occupants of these quarters suffered severely from malaria from time to time.

Improvements.—No improvements were carried out during the year.

Return showing the following for the year ending 31*st December*, 1936.

	Total.
(a) Mortality from execution 5; (b) From natural causes 7	12
Insanity	2
Removal on Medical Grounds	—
Suicide	. .
Cases treated among prisoners in hospital	905
Number in custody 31.12.36	649
Received into prison during 1936	3,342
Daily average in custody during 1936	549
Death per 1,000 calculated on the daily average during 1936	11
Cases treated in prison during 1936	2,441
Greatest number in custody any one day	682
Discharged during the year 1936	3,424
Number of Officers treated in the prison during 1936	73
Number of prisoners received in feeble health during 1936	42
Number of prisoners discharged in feeble health during 1936	35
Daily average of sick in Hospital during year	. .
Daily average of sick treated outside hospital during year	52
Greatest number of sick in hospital any one day during 1936	42
Greatest number of sick treated outside hospital any one day during 1936	131
Number of cases treated outside hospital during 1936	1,536
No. of blood specimens sent to Bacteriologist for Kahn Test during 1936	126
No. of blood specimens sent to Bacteriologist showing positive Kahn during 1936	87
No. of blood specimens sent to Bacteriologist for malaria test during 1936	271
No. of blood specimens sent to Bacteriologist showing M.P. during 1936	178
No. of stool specimens sent to Bacteriologist for Hookworm test during 1936	57
No. of stool specimens sent to Bacteriologist showing ova present during 1936	32
No. of specimens sent to Bacteriologist for Widal test during 1936	12
No. of specimens sent to Bacteriologist showing positive Widal test during 1936	5
No. of sputum specimens sent to Bacteriologist for T.B. test during 1936	11
No. of sputum specimens sent to Bacteriologist showing T.B. present during 1936	3
No. of surgical operations performed during 1936	87
No. of Salvarsan Injections given during 1936	400
No. of Bismuth Salicyl Injections given during 1936	234
No. of Officers retired from the Service during 1936	3

H. H. BLAIR,
Medical Officer.

GOVERNMENT INDUSTRIAL SCHOOL, STONY HILL.

The general health of the School was on the whole satisfactory. During the latter half of the year three cases of Typhoid Fever occurred among the inmates. Two of the cases were transferred to the Kingston Public Hospital. Immediate steps were taken to prevent the spread of the disease, including preventive inoculation of the whole school and chlorination of the drinking water supply.

There is much room for improvement in the school's (a) water supply, and (b) method of house sanitation and sewage disposal which is by the bucket system.

432 cases were treated in Hospital during the year, the most frequent diseases being:—

Influenza	121
Ankylostomiasis and other Intestinal Parasites	64
Ulcers and Wounds	70

16 Minor Operations were performed and 48 Injections of Neo-arsphenamine given.
There were 20,428 Out-patients dressings.
No epidemics nor deaths occurred.

E. S. Greaves,
Medical Officer.

Return of Diseases and Deaths, 1936.

Diseases.	General Penitentiary			St. Catherine District Prison.			Industrial School Stony Hill.		
	In-Patients.	Deaths.	Out-Patients.	In-Patients.	Deaths.	Out-Patients.	In-Patients.	Deaths.	Out-Patients.
Enteric Fever	1	..	..	6	2	..	3	..	..
Malaria	103	..	952	439	..	17	..	..	..
Yaws	3	..	4	5	..	29	..	..	..
Tuberculosis, Pulmonary	2	..	4	3	..	..	1	1	..
Do. of other Organs	..	..	..	3	..	..	..	..	..
Influenza	29	..	325	..	..	3	121	..	..
Measles	..	..	..	..	..	..	2	..	..
Chicken Pox	..	..	..	..	..	..	..	..	..
Diarrhoea	42	1	..	..	..	..	..	..	..
Dysentery	21	1	..	..	..	..	..	..	..
Mumps	1	..	..	..	..	18	1	..	..
Soft Chancre	..	..	..	5	..	15	..	..	..
Diabetes	..	..	..	2	..	..	..	..	..
Syphilis	4	..	250	50	1	52	..	..	..
Gonorrhoea	2	..	37	13	..	96	1	..	..
Septicaemia	..	..	..	..	..	..	..	..	..
Cancer	1	..	..	..	..	..	..	..	..
Tumours, non malignant	..	..	..	1	..	..	..	..	..
Rehumatism, Acute	1	..	22	..	..	18	2	..	..
Rehumatism, Chronic	..	..	..	..	..	6	..	..	..
Lumbago	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Scurvy	5	..	30	..	..	..	..	..	..
Pellagra	..	..	..	..	..	..	..	..	..
Anaemia	7	..	114	3	..	13	..	..	..
Ankylostomiasis	..	..	331	31	..	26	22	..	..
Appendicitis	..	..	..	1	..	..	..	..	..
Hernia	..	..	24	2	..	46	..	..	..
Affections of Nervous System	38	..	459	25	1	71	7	..	..
Affections of Circulatory System	12	1	442	38	1	30	11	2	..
Affections of Respiratory System	18	..	16	17	..	29	1	..	..
Affections of Skin and Cellular Tissues	75	..	1,437	78	..	294	68	..	..
Affections of the Ductless Glands	1	..	2	..	..	..	..	..	..
Diseases of the Digestive System	34	1	7,289	106	1	459	54	..	..
Diseases of the Genito-Urinary System	16	4	251	15	1	27	1	..	..
Diseases of the Puerperal State	..	..	..	..	..	..	..	..	..
Diseases of the Bones and Organs of locomotion	5	..	159	3	..	2	..	..	..
Affections produced by external causes	47	..	3,550	42	5	278	24	..	..
Ill-defined diseases	51	3	57	16	..	8	4	..	..
Diseases of Infancy	..	..	..	..	..	..	..	..	..
Diseases of Old Age	1	..	8	2	..	..	..	..	..
	520	11	15,763	906	12	1,537	323	2	..

VII.—SCIENTIFIC.

Report of the Bacteriological and Pathological Laboratory.

Administration.—Following a regrading of salaries, the Laboratory Staff at the end of the year was as follows:

The Bacteriologist and Pathologist	£700—£800 p.a.
The Assistant Bacteriologist and Pathologist	£600—£800 p.a.
1 Chief Laboratory Assistant	£325—£450 p.a.
1 Senior Laboratory Assistant	£180—£300 p.a.
4 Junior Laboratory Assistants	£100—£160 p.a.
1 Technician (V.D. Clinics)	£100—£160 p.a.
1 Laboratory Assistant (Water Board)	£ 78 p.a.
4 Laboratory Attendants	£ 52 p.a.
2 Cleaners	£ 26 p.a.

In addition to his substantive position the Bacteriologist has also been in charge of the Venereal Diseases Free Clinics. He was on eight weeks leave during the early part of the year owing to illness.

Mr. W. A. King, the Senior Laboratory Assistant, was granted a Scholarship by the Rockefeller Foundation which enabled him to spend 2 months in the Bureau of Laboratories, Michigan Department of Health at Lansing, Michigan, U.S.A.

Messrs. B. L. Gibson and L. M. Phipps were transferred from the Laboratory and appointed Orderlies in the V. D. Free Clinic for Men. They were succeeded by Messrs. D. W. Cardoza and L. K. Brown.

Mr. E. G. Miller severed his connection with the Laboratory, and Mr. H. V. Garriques was promoted to his position, Mr. G. S. Smith succeeded Mr. Garriques.

Mr. W. G. Fitz Ritson was appointed Technician (V.D.) when the Free Clinic for Men was opened in October.

Visitors:—During the year the Laboratory was honoured by special visits from the following:

The Honourable C. C. Woolley, M.C., Colonial Secretary, in the capacity of Acting Governor.
Mrs. Neville-Rolfe, O.B.E., Secretary-General, British Social Hygiene Council.
Doctors Sawyer and Opie of the Rockefeller Foundation.
Dr. N. W. Larkum, Director of the N. W. Larkum Clinical Laboratory in Lansing, Michigan, U.S.A.

GENERAL.

The total number of examinations made on specimens received by the Laboratory during 1936 amounted to 57,950 (the examination of mosquitoes and larvae not included). This new record is 46.5% over and above the total for last year and more than twice the work done in 1934. The increase was manifested in nearly all phases of work, but the items mainly responsible were the high incidence of Malaria (in Kingston and St. Andrew especially) during the four months June to September, and the establishment of the first two clinics in the Island's Special Campaign against Venereal Diseases. With respect to these latter, the time-consuming routine preparation for examinations and the amount of microscopical work involved further stress the necessity for additional staff.

Descriptive and Tabular details hereunder.

Equipment:—Additions of equipment to the Laboratory during the year were two microscopes, one incubator, one balance and apparatus for the chemical analysis of milk.

Serology of Syphilis:—The Kahn Precipitation Test was used throughout the year—a total of 23,621 specimens being done. The routine serological examination on all admittances to the Kingston General Hospital and Victoria Jubilee Lying-in Hospital was discontinued during the year, the Kingston General Penitentiary and the Mandeville Hospital and Poor House being substituted in their stead. Over 50% of the Penitentiary inmates were positive.

Surveys were also done on the Holmwood Training Centre and on several public schools in the Corporate Area.

Enteric Diseases:—Owing to the very low proven incidence of Paratyphoid fevers in the Island the routine tests for these infections—on blood submitted for Widal—were discontinued early in the year. In spite of this, the 4,500 agglutination tests made for enteric diseases were only 369 less than in 1935. There was a small sporadic outbreak of Bacillary Dysentery (Flexner X) in the Yallahs Area.

Other serological agglutination tests numbered 472 and were chiefly an investigation into the probable incidence of Br. Abortus and Br. Melitensis infections in Jamaica. There were no positives.

Stool Examinations:—During 1936 totalled 4,221 as compared to 2,883 done last year. The majority of this increase was for Helminths and showed a slightly lower percentage of positives (50%) than was found in 1935 (57.5%) although 295 out of 456 stools (65%) from the General Penitentiary, Kingston, contained Hookworm Ova.

The percentage of Amoebic Dysentery positives remained at the same level.

Gonorrhoea:—There was a very great increase in microscopical examinations for Gonococci during 1936. The number of smears examined amounted to 5,333, more than five times as many as the combined totals of the five previous years, with 37.3% of positives. This increase was due entirely to the establishment of the Male and Female V. D. Free Clinics in Kingston, the total number of smears received from all other sources remaining approximately the same as in 1935. None were received from the Mental Hospital.

The percentage of positives was less than in previous years, obviously because smears were taken at the Clinics from both sexes before and after treatment, and not only from the pre-treated frank and specific discharges in the male as were previously usually submitted for examination.

The Women's Clinic was started in October, 1935, and the Male Clinic in October, 1936.

Malaria:—There were 6,862 blood smears examined for Malaria Parasites during the year, an increase of approximately 53% above the 1935 total (4,478), with a positivity of 39.5% as compared to 30% in the previous year and 25% in 1934. Of 465 smears from the Kingston General Penitentiary only 17% were positive.

Over 94% of the positives mears done in 1936 showed Subtertian Parasites.

All examinations of smears and larvae from the Malaria Commission, amounting to 1,200 and 19,972 respectively, were conducted by the Laboratory. The latter are not included in the total of all specimens done for the year.

Clinical Pathology and Bacteriology:—The totals of the chief items under this head with their approximate percentage increases over 1935 are as follows:—

Blood Counts	738—78%
Blood Cultures	39—129%
Blood Ureas	182—50%
Blood Sugars	862— 2%
Stool Cultures	496—20%
Gastric Analyses	39—95%
Urine Analyses	5,415— 5%
Sputum for Tbc.	1,341—20%

Miscellaneous:—The use of the special egg-potato starch medium for T. B. cultures was discontinued during the year, and guinea-pig inoculations employed on microscopically negative sputa and pathological fluids when requested.

There were large increases over 1935 in Medico-legal examinations and Morbid Histology, Sections having been made from Post Mortem material in the majority of Ackee Poisoning or Vomiting Sickness cases.

28,000 c.c. of sterile milk and 38,000 c.c. of Typhoid Vaccine were prepared during the year; and 108 persons were inoculated by the Laboratory.

Reports on examinations for Typhoid and Malaria were communicated to Physicians in the Country by telegrams of which 1,637 were sent for the year.

Origin of all Specimens.

Table I.

	1932.	1933.	1934.	1935.	1936.
Kingston Public Hospital	9,061	10,099	19,259	22,634	20,064
Lunatic Asylum	701	601	967	1,530	1,642
Other Institutions	1,181	1,926	1,826	5,133	19,792
Country Medical Districts	875	1,018	1,783	3,871	7,527
Health Officers	175	739	2,709	3,440	4,241
Private Practitioners	642	716	835	2,958	4,684
	12,635	15,099	27,379	39,566	57,950

Distribution of Specimens.

Table II.

	1932.	1933.	1934.	1935.	1936.
Autogenous Vaccines	46	61	47	52	35
Autopsies	118	114	148	141	118
Blood Examinations:—					
Counts	202	251	350	415	738
Cultures	15	14	25	17	39
Parasites	86	280	1,635	2,970	5,662
Parasites (Malaria Commission)	..	..	615	1,508	1,200
Sugars	308	517	606	846	862
Ureas	16	38	88	115	182
Examination of Faeces:—					
Helminths	620	691	893	1,638	2,709
Amoebae	99	388	669	831	1,016
B. Dysenteriae	110	116	200	363	312
Miscellaneous	44	59	40	51	184
Examinations for Gonococci	90	151	202	435	5,333
Examinations for B. Lepra	(small nos.—"Unclass Exams.")				180
Examinations for B. Tuberculosis	375	422	464	957	1,341
Gastric Analyses	11	16	38	20	39
Medico-legal Examinations	162	121	202	241	409
Milk Examinations	80	..	28	46	76
Morbid Histology	77	85	127	142	227
Persons Vaccinated	..	139	119	106	108
Serology of Syphilis	7,489	5,610	8,842	15,366	23,621
Serology of Enteric Diseases	825	1,477	2,526	4,869	4,972
Throat Swabs	81	102	122	50	135
Typhoid Vaccine Prepared	828	1,294	1,146	1,125	1,907
Unclassified Examinations	126	204	86	459	186
Urinalyses	1,293	2,275	5,994	5,169	5,415
Water Examinations	362	664	742	780	944
	13,463	15,089	25,954	38,712	57,950

Table IIa.—Results of Examinations.

Nature of Test.	Kingston Public Hospital.	Lunatic Asylum.	Other Institutions.	Country Medical Districts.	Health Officers.	Private Practitioners.	Total.
Autogenous Vaccines ..	35	..	..	..	..	..	35
Typhoid Vaccine ..	..	..	1,907	..	..	..	1,907
Blood Examinations:—							
Counts ..	564	..	8	13	14	139	738
Cultures ..	23	1	7	2	..	6	39
Malarial Parasites +	903	197	308	430	608	264	2,710
Malarial Parasites —	1,106	601	550	621	895	379	4,152
Sugars ..	820	..	3	11	..	28	862
Ureas	174	..	3	1	..	4	182
Examination of Faeces—							
Ankylostome +	144	80	494	141	47	39	945
Ascaris +	14	14	46	14	14	8	110
Trichocephalus +	76	45	99	43	27	18	308
Helminths —	438	100	298	179	212	119	1,346
Amoebae +	93	70	17	12	8	30	230
Amoebae —	317	226	92	68	10	73	786
B. Dysenteriae +	..	2	..	..	..	..	2
B. Dysenteriae —	45	182	26	19	7	31	310
Miscellaneous ..	71	3	12	70	13	15	184
Examinations for Gonococci:—							
Gonococci +	33	..	1,798	38	5	62	1,936
Gonococci —	50	..	3,050	61	2	179	3,342
Gram. Neg. Diplococci +	25	..	5	8	1	16	55
Examinations for B. Lepra:—							
B. Lepra +	2	..	90	1	3	1	97
B. Lepra —	2	..	63	13	1	4	83
Examinations for B. Tuberculosis—							
B. tuberculosis +	63	4	60	140	89	44	400
B. tuberculosis —	245	29	133	296	144	94	941
Medico-Legal Articles:—							
Blood +	..	..	169	..	..	..	169
Blood —	..	..	76	..	..	..	76
Human blood examinations ..	..	..	85	..	..	..	85
Semen +	..	..	19	..	..	..	19
Semen —	..	..	60	..	..	..	60
Milk Examinations ..	..	..	..	..	76	..	76
Morbid Histology ..	84	..	3	116	1	23	227
Serological Examinations							
Kahn Precipitation:							
+	3,194	1	3,926	1,683	136	1,138	10,078
—	3,528	1	5,840	1,597	904	1,399	13,269
Doubtful +	38	..	24	22	3	18	105
Contaminated ..	..	..	6	120	..	15	141
Spinal Fluids ..	15	..	1	7	..	4	28
Widal Reaction							
B. typhosus (T.1/250, 1/125) +	353	22	8	490	56	83	1,012
B. typhosus —	1,098	14	22	459	57	126	1,776
B. typhosus (Doubtful T. 1/25, 1/50)	376	24	13	348	30	73	864
B. paratyphosus A. +	1	1	..	2	..	1	5
B. paratyphosus A —	212	3	8	135	9	39	406
B. paratyphosus B. +	4	..	..	..	..	..	4
B. paratyphosus — B.	209	4	8	137	9	40	407
Br. Abortus +	..	..	..	..	..	..	..
Br. Abortus —	135	2	..	64	9	26	236
Br. Melitensis +	..	..	..	..	..	..	..
Br. Melitensis	135	2	..	64	9	26	236

Nature of Tests.	Kingston Public Hospital.	Lunatic Asylum.	Other Institutions.	Country Medical Districts.	Health Officer.	Private Practitioners.	Total.
B. Dysenteriae (Flexner) +	1	. .	. .	. .	16	. .	17
B. Dysenteriae (Flexner X) —	. .	. .	. .	. .	8	. .	8
B. Dysenteriae (Flexner X) +	. .	. .	. .	. .	1	. .	1
B. Dysenteriae (Flexner X) —	. .	. .	. .	. .	. .	. .	. .
Stomach Contents:							
Test Meal . .	35	. .	. .	3	. .	1	39
Throat Swabs:—							
Diphtheria +	7	. .	. .	1	9	. .	17
Diphtheria —	18	. .	. .	3	19	2	42
Streptococci +	24	. .	1	2	1	19	47
Vincent's Angina +	13	. .	. .	. .	. .	. .	13
Vincent's Angina —	15	. .	. .	. .	. .	1	16
Unclassified Examinations	105	6	31	17	19	8	186
Urine Examinations:—							
Chemical Qualitative	4,430	5	166	45	8	58	4,712
Chemical Quantitative	188	. .	1	2	. .	2	193
Bacteriological . .	377	2	71	29	2	29	510
Water Examinations:—							
			Water Board				
Filtered:							
Positive . .	. .	. .	. .	. .	5	. .	5
Doubtful . .	. .	. .	. .	. .	2	. .	2
Negative . .	. .	. .	. .	. .	7	. .	7
Filtered Chlorinated:							
Positive . .		. .	3	. .	39	. .	42
Doubtful . .	. .	. .	50	. .	260	. .	310
Negative . .	. .	. .	90	. .	247	. .	337
Unfiltered							
Positive . .	. .	. .	. .	. .	133	. .	133
Doubtful . .	. .	. .	. .	. .	29	. .	29
Negative . .	. .	. .	. .	. .	17	. .	17
Unfiltered Chlorinated:	. .	. .					
Positive . .	. .	. .	1	. .	8	. .	9
Doubtful . .	. .	. .	. .	. .	6	. .	6
Negative . .	. .	. .	41	. .	6	. .	47

Table III.—Autopsies.

Causes of Death.	Ordered for Coroner.	Requested by M.O's. of Hospital.	Total.
General Diseases—			
(1) Syphilis (Congenital, Acquired)	. .	4	4
(2) Enteric Fever	. .	6	6
(3) Marasmus	. .	1	1
(4) Status Lypmhaticus	2	1	3
(5) Malaria Fever	. .	5	5
(6) Diabetes Mellitus	. .	2	2
	2	19	21
Injuries—			
(1) Burns (Shock, sepsis, Broncho-pneumonia)	6	. .	6
(2) Long Bones (fracture, shock, sepsis, cardiac-failure)	6	. .	6
(3) Skull (fracture, haemorrhage, bullet wounds, meningitis, etc.)	13	. .	13
(4) Spinal Injuries (fractures, dislocations, haemorrhage)	1	. .	1
(5) Rupture of Liver	2	. .	2
(6) Rupture of Kidney	1	. .	1
(7) Rupture of Intestines	1	. .	1
(8) Laceration of Arteries and Veins (Shock, haemorrhage) . .	3	. .	3

Causes of Death.	Ordered for Coroner.	Requsted by M.O's. of Hospital.	Total.
(9) Drowning	2	..	2
(10) Heart (Stab and bullet-wounds)	2	..	2
(11) Laceration of Muscles (multiple haemorrhage, shock)	2	..	2
	41	19	60
Diseases of Brain and Meninges—			
(1) Vascular (Haemorrhages, Syphilis, Tumours)	..	5	5
	41	24	65
Diseases of Circulatory System—			
(1) Aneurysms (Aorta, femoral)	..	4	4
(2) Cardiac failure (Coronary disease, myocarditis, Syphilis, acute dilation, valvular insufficiencies	2	7	9
(3) Pericarditis	1	..	1
	44	35	79
Diseases of Respiratory System—			
(1) Pulmonary Tuberculosis	1	3	4
(2) Lobar Pneumonia	..	1	1
(3) Bronchopneumonia	..	1	1
(4) Pulmonary Oedema	..	1	1
(5) Pulmonary Infarct	..	1	1
(6) Lung Abscess	..	1	1
	45	43	88
Diseases of Renal Excretory System—			
(1) Chronic Nephritis (cardio-renal)	..	4	4
(2) Uraemia	..	1	1
(3) Acute Haemorrhagic Nephritis	1	..	1
	46	48	94
Diseases of Digestive System—			
(1) Liver (abscess, toxic degeneration, cirrhosis)	4	4	8
(2) Gastro-enteritis	..	1	1
(3) Pancreatitis (haemorrhagic)	..	2	2
(4) Gastric Ulcer (perforated)	..	2	2
(5) Duodenal Ulcer (perforated)	..	1	1
(6) Peritonitis (post obstructive)	..	1	1
(7) Intestinal Obstruction (Volvulus, hernia, adhesions)	1	1	2
(8) Suphrenic Abscess	..	1	1
(9) Mesenteric Thrombosis	..	1	1
	51	62	113
Diseases of Reproductive System—			
(1) Oopharo-salpingitis (peritonitis)	..	1	1
(2) Ruptured Ectopic Gestation	..	1	1
(3) Rupture of Uterus	..	1	1
	51	65	116
Neoplasms—			
(1) Carcinoma (liver, stomach, duodenum, oesophagus	..	1	1
(2) Lymphosarcoma	..	1	1
	51	67	118

Table IV.—Morbid Histology.

(1) *Tumours*—

(a) Benign:

Adenoma	1
Condyloma	2
Cysts	11
Fibroadenoma (inc. Fibroma, Fibromyoma)	20
Haemangioma	2
Papilloma	1
	37

(b) "Borderline" (Locally malignant)	
Osteoclastoma	5
"Basal-celled" Carcinoma (Rodent Ulcer)	3
	8
(c) Malignant:	
Carcinoma	32
Epithelioma	7
Melano Sarcoma	2
Myeloma	1
Neurocytoma	1
Sarcoma	6
	49
(2) *Inflammatory etc.*—	
Degenerations	8
Cirrhosis	2
Inflammatory (not inc. Tbc. and Syphilis)	49
Tuberculosis	5
Syphilis	4
Lymphatic Leukaemia	1
Malarial tissues	2
Toxic Poisoning (Ackee) . .	39
	110
(3) Normal Tissues	23
Grand Total . .	227

K. Leigh Evans,
Government Bacteriologist and Pathologist.

Table I.—Finance.

Returns showing Cost per Occupied Bed per annum for the year ended 31st December, 1936.

Hospitals.	Average No. of Beds. occupied.	Cost of Staff.	Other Charges.	Total.	Cost per occupied Bed per annum.	
					Staff.	Other Charges.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Public Hospital, Kingston . .	391	17,564 19 10	17,761 4 8	35,326 4 6	44 18 6	45 8 6
Jubilee . .	45	3,102 19 10	3,081 7 7	6,184 7 5	68 19 1	68 9 6
Lepers Home . .	155	1,164 11 2	2,366 3 6	3,530 14 8	7 10 3	15 5 4
Morant Bay . .	33	751 10 6	905 13 3	1,657 3 9	22 15 6	27 8 10
Hordley . .	32	843 3 2	649 5 3	1,492 8 5	26 6 11	20 5 10
Pt. Antonio . .	50	1,162 12 5	853 9 9	2,016 2 2	23 5 1	17 1 4
Buff Bay . .	45	1,085 15 1	884 17 6	1,970 12 7	24 2 7	19 13 3
Annotto Bay . .	55	1,045 12 10	1,127 5 7	2,172 18 5	19 0 3	20 9 11
Port Maria . .	70	1,167 4 0	1,320 15 4	2,487 19 4	16 13 6	18 17 4
St. Ann's Bay . .	45	1,106 12 1	1,091 13 4	2,198 5 5	24 11 10	24 5 2
Cave Valley . .	12	359 5 0	286 7 4	645 12 4	29 18 9	23 17 4
Falmouth . .	27	820 12 8	878 2 7	1,698 15 3	30 17 10	32 10 6
Ulster Spring . .	8	336 11 8	262 3 11	598 15 7	42 1 5	32 15 6
Montego Bay . .	100	1,631 4 1	3,135 19 1	4,767 3 2	16 6 2	31 7 3
Lucea . .	29	843 5 1	783 17 3	1,632 2 4	29 5 0	26 7 10
Sav.-la-Mar . .	67	1,191 9 6	1,461 6 8	2,660 16 2	17 18 1	21 16 2
Black River . .	77	1,147 7 0	1,659 13 5	2,807 0 5	14 18 0	21 11 1
Mandeville . .	46	962 19 6	1,110 17 11	2,073 17 5	20 18 8	24 3 0
Chapelton . .	44	793 5 10	963 11 3	1,756 17 1	18 0 7	21 18 0
Lionel Town . .	44	907 12 3	1,083 0 11	1,990 13 2	20 12 7	24 12 3
Spanish Town . .	72	1,272 4 9	1,545 15 2	2,817 19 11	17 13 5	21 9 5
Linstead . .	42	1,008 17 8	824 9 5	1,833 7 1	24 0 5	19 12 7
	1,489	40,282 15 11	44,037 0 8	84,319 16 7	. .	. .
Lunatic Asylum . .	2,023	22,848 1 10	20,792 14 10	43,640 16 8	11 5 10	10 5 7

II.—Return showing the value of Drugs, etc., supplied to the various Institutions from the Island Medical Stores from 1.1.36 to 31.12.36.

	£	s.	d.
Value of Drugs and Sundries issued to Public General Hospitals, Lepers' Home and Medical Districts ..	7,722	9	5
" Stimulants issued to Public General Hospitals ..	27	14	7
" Drugs etc., issued to Kingston Public Hospital ..	4,732	16	1
" Stimulants issued to Kingston Public Hospital ..	21	3	11
" Drugs, etc., issued to Jubilee Hospital ..	347	1	5
" Stimulants issued to Jubilee Hospital	0	14	4
" Drugs, etc., issued to Lunatic Asylum	229	2	8
" Drugs, etc., issued to Prisons and Industrial School	300	0	5
" Drugs, etc., issued to Department of Agriculture	16	9	0
" Drugs, etc., issued to Quarantine Board ..	40	18	10
" Drugs, etc., issued to Parochial Boards ..	771	17	10
" Stimulants issued to Kingston and St. Andrew Corporation	0	6	2
" Drugs, etc., issued to Constabulary Department	44	19	5
" Drugs, and Sundries sold	327	3	9
" Lymph issued to Medical Officers	422	3	5
" Lymph sold	7	15	0
" Drugs, etc., issued to Hookworm Commission ..	33	4	3
" Quinine issued to Post Office for Packets ..	799	1	1
" Quinine issued to Schools	39	11	8
" Quinine issued to Estates	12	10	0
" Drugs, etc., issued to Jamaica Government Railway	19	1	9
" Drugs, etc., issued to Tuberculosis Clinic ..	509	6	3
" Drugs, etc., issued to Malaria Commission ..	15	14	9
" Drugs, etc., issued for the Control of Epidemic Diseases	414	14	7
" Drugs, etc., issued to Yaws Commission ..	486	12	4
" Drugs, etc., issued to Venereal Diseases Clinics ..	451	19	5
	£17,794	12	4

The following return shows the amount of Quinine issued from the Medical Stores during 1936.

		lbs.	oz.
Police for their own use	Tablets	16	8
Post Office for Sale	"	420	..
Estates	"	6	10
Parochial Boards	"	7	12
Hospitals and Asylum	"	16	2
Prisons and Industrial School ..	"	2	4
Malaria Commission	"	7	..
Epidemic Measures	"	118	..
Dispensaries	"	8	4
Hospitals and Asylum	Quinine Sulphate	406	4
Parochial Boards	"	11	14
Prisons and Industrial School ..	"	13	12
Epidemic Measures	"	4	6
Dispensaries	"	82	1

During the year there were two examinations held under Law 20 of 1926 "The Sale of Drugs and Poisons Law," at which fifty-eight candidates presented themselves including five from the Public Hospital. In all thirty-two candidates including three from the Public Hospital satisfied the examiners and were granted licenses.

There was also a special examination held under this Law at which one candidate was examined. He satisfied the examiners.

III.—Return of Cases in the Kingston and St. Andrew Corporation Hospital for Infectious Diseases (for 5-year period.)

Admission.	1932.	1933.	1934.	1935.	1936.
Chicken Pox ..	69	19	..	1	..
Measles	45	13	..	..	..
Syphilis	..	4	..	..	..
Diphtheria	..	..	1	1	..
Yaws	..	1	..	..	..
Whooping Cough ..	1	..	..	..	..
Scarlet Fever ..	..	..	..	..	1
Leprosy ..	2	1	..	..	..
Impetigo	..	1	..	..	..
Under Observation ..	3	..	..	..	..

I. J. Cruchley,
Medical Officer of Health, Kingston and St. Andrew.

MEDICAL DEPARTMENT.

Report for the year ended 31st December, 1936.

Part II.

I.—REPORT OF MOBILE HEALTH UNIT NO. I FOR THE YEAR 1936.

Section I.—St. James.

During the four months of January to April, 1936, the then Hookworm Treatment Unit No. 1 continued its operations in the Montego Bay Area of the parish of St. James.

The following Tables disclose the work accomplished during the four months, January to April, 1936; 'A' being a reference to Treatments by Districts, and 'B' in reference to Sanitation.

Table 'A'.

Nos.	Districts.		Census.	Examined.	Infected.	Treated.
1-5 *6-10	(Closed Being worked)		8,690	8,134	2,486	1,737
6	Montego Bay F	..	..	4	2	2
7	Montego Bay G	..	..	6	..	1
8	Montego Bay H	..	..	25	5	47
9	Belmont	..	185	187	131	295
10	Tower Hill	..	53	53	27	202
11	Salt Spring A	..	536	533	347	301
12	Reading	..	423	416	199	154
13	White House	..	421	420	178	157
14	Granville	..	467	466	398	326
15	Comfort Hall	..	688	680	409	397
16	Flower Hill	..	525	508	358	312
17	Mount Salem	..	349	329	164	128
18	Salt Spring B	..	543	525	211	171
19	Bogue	..	394	388	212	189
20	Tucker	..	450	440	248	202
	Closing Figures	..	13,724	13,114	5,381	4,601
	Less to 31.12.35	..	8,690	8,134	2,486	1,737
	Results Jan.—April		5,034	4,980	2,895	2,864

N.B. *These figures represent work to 31.12.35.

Table 'B'.

		1st. Latrine Classfn.			2nd Latrine Classfn.		
Districts.	No. of Homes.	D.	E.	F.	D.	E.	F.
20	2,545	1,682	143	175	1,804	71	169

From Table 'B' it will be noted that there were 92 more sanitary latrines at the end of the 4 month period than at the beginning of same.

The following are Final Figures for the parish of St. James showing the work of the Unit during its occupation for three years and eight months.

Area.		Census.	Examd.	Infected.	Treated.	Cured.	Under Treatment.
Adelphi	.. .. ..	8,731	8,705	5,454	4,877	4,458	136
John's Hall-Maroon Town	..	12,010	11,998	9,389	8,547	8,123	64
Cambridge	.. ..	12,717	12,707	9,818	8,935	8,538	58
Montego Bay	.. ..	13,724	13,114	5,381	4,601	3,406	1,058
		47,182	46,524	30,042	26,960	24,525	1,316

SECTION 2.—WESTMORELAND.

On the 1st May, 1936, the Unit was transferred as a Mobile Health Unit to the St. John's Division of the parish of Westmoreland, with Bethel Town as its headquarters. The scope of the Unit's activities was then widened to include Sanitation, Hookworm Treatment, Yaws Control particularly and all Infectious Diseases generally, the Medical Officer of Health for the parish being in charge.

The plan on which the Unit operates at present is, first of all, to improve the sanitation of the districts; then, examine and treat for Hookworms. In the meantime Educational work is carried on, Infectious diseases are located and reported, and in the case of Yaws, treated. In reference to the Treatment of Hookworm Disease, the method now employed is to give three straight treatments, the first and second being of Chenopodium and Thymol respectively, the third being Chenopodium usually. Magnesium Sulphate and Jalap are given as purges. This has been found to give satisfactory results as reflected in the 10% re-examination.

HOOKWORM TREATMENT.

The following Table 'A', shows the work accomplished during the eight-month period, May to December, 1936.

TABLE 'A'.

Nos.	Districts.	Census.	Exmd.	Infected.	Treated.	3 Trts. given.	Disctd. Treat.	Under Treat.	Percentage Infectn.
1-5	(Closed)	3,250	3,205	1,983	1,769	1,708	9	52	61.8
6	Castle Mtn.	634	588	352	..	..	..	..	..
7	Greenwich ..	413	..	..	..	..	..	..	..
	Totals ..	4,297	3,793	2,335	1,769	1,708	9	52	..

Table 'B' shows details of Treatments and Re-Examinations carried out in the closed districts, 1-5.

Table 'B'

		Treatments.				10% Re-Examinations.		
Nos.	Districts.	1st	2nd	3rd	Total.	Examd.	Cured.	% Cured.
1	Cornwall Mtn.	456	456	456	1,368	4	1	25
2	Mt. Stewart	252	252	251	755	11	11	100
3	Galloway	327	320	313	960	31	26	83.8
4	Argyle Mtn.	405	395	366	1,166	40	37	92.5
5	Bethel Town	329	327	322	978	40	35	87.5
	Totals	1,769	1,750	1,708	5,227			

YAWS CONTROL.

The following table sets out work done in the regular Treatment Centres.

Table 'C.'

			Total No. Cases.			Total Injections.			
Area.	Date begun	Treatments concl'd.	Cens'd.	Non-Cen.	Cases	Cns'd.	Non-cen.	Total	New Cases.
Lambs River	19.4.36	24.5.36	227	30	257	990	110	1,100	..
Lambs River	11.10.36	15.11.36	166	56	222	689	189	878	48
		Totals	393	86	479	1,679	299	1,978	48
York ..	23.5.36	4.7.36	103	18	121	556	66	622	..
York ..	7.11.36	12.12.36	54	23	77	256	85	341	14
		Totals	157	41	198	812	151	963	14
Berkshire ..	15.8.36	26.9.36	78	5	83	405	26	431	..
	19.4.36 to Grand Totals	12.12.36	628	132	760	2,896	476	3,372	62

Table D, below, sets out work covered by the Demonstration Clinic of the Medical Director.

Table 'D'.

Area.	Date Begun.	Treatments Concl'd.	Total No. Cases.			Total Injections.			New Cases.
			Cens'd.	Non. Cen.	Cases.	Cons'd.	Non-cen.	Total	
Bethel Town	26.6.36	2.10.36	105	10	115	537	50	587	..

SANITATION.

The time spent in the several districts in the interest of Sanitation resulted in improvements in the closed districts as are disclosed in Table F.

Table 'F'.

	First Classification.				Second Classification.			
District.	No. of Homes.	D.	E.	F.	No. of Homes.	D.	E.	F.
1	167	75	59	33	167	122	16	29
2	89	41	40	8	89	82	5	2
3 ..	136	110	9	17	138	104	23	11
4	134	71	49	14	134	79	43	12
5 ..	145	83	42	20	145	126	11	8
Totals	671	380	199	92	673	513	98	62

Five Lantern Lectures on Hookworm Disease were given to an estimated aggregate attendance of 1,175 by the Senior Sanitary Inspector assisted by other members of the staff in districts being controlled. There were also numerous house-to-house talks given by the Sanitary Inspectors with the usual distribution of pamphlets and Health bulletins. During Health Week, 12 schools were reached by Sanitary Inspectors, in which lectures on the topic of the year (Nutrition) were given to an aggregate attendance of 1,700.

REPORT OF MOBILE HEALTH UNIT NO. 2 FOR THE YEAR 1936.

The Unit completed the Riversdale Area after 18 months of operation. A description of the area the progress of the work, and incidence rate have been given in the reports for 1934 and 1935. The figures in Tables I—VI show the concluding stages of the Unit's activities.

Table I (December, 1935.)

Districts.	Census.	Examined.	Infected.	Percentage.	Treated.	Cured.
(1-15 closed)	7,725	7,653	5,938	77.5	5,419	5,212
16-19 (not closed)	2,812	2,788	2,403	86.1	2,099	925
Totals	10,537	10,441	8,341	79.8	7,518	6,137

Table II.

Showing work done in Laboratory and Field—January to April, 1936.

Month.	Census.	1st Exams.	Total Exams.	1st Treatments.	Total Treatments.	Cured.
January ..	1,040	1,035	1,994	71	944	587
February ..	..	46	857	729	1,820	532
March ..	531	560	1,387	80	763	559
April ..	..	10	104	270	588	71
Totals ..	1,571	1,651	4,342	1,150	4,115	1,749

Table III.

Showing final figures for the Area.

Districts.	Census.	Exam'd.	Infected.	Percentage.	Treated.	Cured.	Percentage.
1-22	12,108	11,998	9,634	80.3	8,668	7,889	90.9

A total of 25,338 treatments were given to secure 90.9% cures.

RESIDUAL INFECTION.

The residual include a comparatively small number of cases refusing or refractory to treatment. Not treated for medical reasons, removing before and during treatment represent the large group. The problem indicated at the start of the campaign is, however, much reduced.

Table IV.

Showing the position at Start of Campaign.			Close of Campaign.		
1st Exam.	Negative.	Infected.	Negative.	Infected.	% Residue.
11,998	2,364	9,634	10,253	1,724	14.3

1,724 or 14.3 residue is not a true figure. No cures have been recorded for district No. 22, Prospect (see Table III). In this district, 3 straight treatments were given—time not allowing for the regular routine. Use has shown that such a method does secure about 70% of cures, and if this had been recorded, the number in the above table for infected at the close of the campaign would have been reduced.

SANITATION.

As was mentioned in the previous annual report, the sanitary conditions prevailing in Riversdale area did not warrant the start of the treatment operations. Pioneer work presented only 38% of premises latrine sanitated. The following table shows the improvement effected during the residence of the Unit.

Table V.

			Latrine Classification.	
District.	No. of Homes.	D.	E.	F.
1-15	1,701	1,454	39	96
16	114	99	. .	4
17	110	85	7	11
18	215	157	8	14
19	177	167	2	3
Totals	2,317	1,962	56	128

Final figures for districts 20—22 were not available. The above table shows that 91.2% sanitary latrines of good structure were left at the close of the campaign or 84.6% homes provided.

On May 2, this Unit of the Central Board of Health was appointed to assist the St. Catherine Health Unit in its sanitary work in the Upper St. Johns division, with offices established at Point Hill.

The general standard was very poor, and the faults were obviously the result of ignorance on the part of householders as to requirements, mode of construction and type of material.

In inaugurating this work, the plan adopted was to detail Sanitary Inspectors to comparatively small areas—3 or 4 adjacent districts—so as to allow sufficient time for supervision. Proper advice and supervision have been lacking in the past, possibly due to the large division of the local Sanitary Inspector.

For the four months April to July the Unit censused 1,338 homes with a population of 6,341. It was found that 50% of the homes had sanitary latrines, 30% had insanitary ones, and 20% had no latrines. During this period 145 new latrines were completed, 167 old ones repaired and 242 new ones were in course of construction.

YAWS CONTROL.

The entire staff ceased its latrine construction at the end of July in order to receive a 2 months' course of training in Yaws control from the Unit under the directorship of Dr. H. D. Chambers.

A survey and census was begun on July 15, and with Point Hill as the centre of operations districts within a four-mile radius were taken.

Co-operation on the part of the householders was excellent, and so efficiently did the Officers do the follow-up for treatments, that all cases which began completed a course of not less than 6 regular treatments within the time allotted.

The following figures show work done in July and August.

					No. with lesions not reporting to clinic	
District.	Census.	No. with History.	No History.	No Information.	Infectious.	Non-infectious.
Browns Town . .	555	181	306	68	. .	2
Mt. River . .	172	73	71	28	. .	1
Mendes . .	274	79	174	21	. .	1
Long Grass . .	523	267	217	39	. .	3
Old Works . .	602	243	297	62	. .	2
Rennalls . .	237	106	117	14	. .	. .
Look Out . .	331	85	236	10	. .	. .
Garden Hill . .	480	112	329	38	1	3
Juan de Bolas . .	451	104	319	27	. .	1
Mendes (a) . .	296	94	158	44	3	1
Rennalls (a) . .	166	88	55	23	3	3
Totals . .	4,087	1,432	2,279	374	7	17

Total cases attending clinic for August	250
Total number of treatments	1,160
Total Wassermans	350

In September the Unit was transferred to Upper Clarendon to expedite latrine construction in the valley of the Rio Minho in view of the incidence of Typhoid fever following the Chapelton epidemic.

Three officers were left in St. Catherine to complete Hookworm treatment in certain districts. These officers worked in Point Hill and Mount River, where 627 out of 816 persons were found infected.

The investigations carried out by the Unit in Upper Clarendon shewed that only 16% of the homes has sanitary latrines while 50% had no latrines at all. There is no pure public water supply in the area, the Rio Minho River being the main source of supply. This river and all smaller streams are subject to gross pollution as their drainage areas are densely covered with homes and cultivated lands.

Very satisfactory progress in latrine construction was made between September and December as shewn by the following table.

	1st. Survey.	2nd Survey.
No. of homes	863	988
No. of homes without a latrine	411	181
No. of homes with an insanitary latrine	311	35
No. of homes with a sanitary latrine	116	684
No. of latrines under construction	..	142

The excellent co-operation of the public is indicated by the fact that not a single prosecution was necessary. The Unit also assisted in getting out the public for mass anti-typhoid inoculations, in finding cases of Tuberculosis, control of mosquito breedings, and paid special attention to educational work by means of lantern lectures, illustrated albums, etc.

II.—REPORT OF "SPECIAL TUBERCULOSIS STUDIES" IN JAMAICA FOR THE YEAR 1936.

By Dr. C. W. Wells.

This report will be presented under the following subdivisions:—

I. Travelling X-ray Unit.
II. Demonstration of Rural Tuberculosis Public Health Nursing.
III. Special Activities.

It should be recorded that the activities discussed under Item II have been materially affected and somewhat curtailed through lack of adequate supervision, by the absence of the writer from Jamaica on accumulated leave from August 1st to December 31st.

I. *Travelling X-ray Unit.*—

From January 1st to June 30th the Travelling X-ray Unit visited 10 parishes for X-ray examinations of cases assembled by the local Medical Officers of Health and District Medical Officers. A total of 963 examinations was made, 181 of which were re-examinations. Among those examined were found 153 cases with manifest pulmonary tuberculosis; 66 of these were re-examinations.

On June 30th the direction of the Travelling X-ray Unit was formally relinquished and turned over to a Government representative, namely, Dr. Richard A. Cory.

II. *Demonstration of Rural Tuberculosis Public Health Nursing:*—

On January 6th Miss Dunkley, who had been connected with this Department for approximately four and a half years, was assigned to duty in the parish of Manchester, to inaugurate a demonstration in rural public health nursing, with special emphasis on tuberculosis. This parish was selected because of the assurance of full co-operation by the Medical Officer of Health, Dr. Pengelley and, also, because the Parochial Board members, as well as a number of lay individuals, had from time to time in the past revealed an interest in their local public health problems, including tuberculosis, and had demonstrated a desire to improve conditions. It was estimated that there were 52 cases of tuberculosis in the parish on January 1st, 1936. The Medical Officer of Health, keenly interested in the problem, had made special effort during the previous year to locate as many cases as possible. Much had been done in the segregation and isolation of known cases in their own homes.

The service of the public health nurse included efforts to locate new cases of tuberculosis; to render to known cases a certain amount of nursing service; to instruct members of households, containing cases of disease, regarding measures directed towards the prevention of spread of infection to others. In many instances also she has assisted in overcoming family and household problems which would make possible segregation and isolation of the cases. In many instances the patient was unable to obtain adequate food, was without facilities to make himself comfortable during his illness, and was without attendance. In several cases the nurse was able to overcome these difficulties and provide ways and means. Of considerable importance in the nurse's activities in Manchester was the contact she had made with other families in various districts in which she travelled, as a result of which she was constantly being called upon to advise and assist, as well as instruct in matters relating to public health problems other than tuberculosis.

From the beginning of the nursing demonstration in Manchester to the end of June, a period of approximately six months, the one public health nurse made 1,088 home visits, most of which were to homes with cases of tuberculosis, but included as well as a large number of visits to homes containing other types of illnesses. In making these visits the nurse covered a total of 5,876 miles. At the beginning of her service in the parish there were 52 known cases of tuberculosis, and at the conclusion of the six months period there were 59. Of special interest was the discovery of 7 new cases of tuberculosis through the individual and special efforts of the nurse.

In May and June it became evident that even a successful demonstration of the value of public health nursing in Manchester would not impress Government to the same degree as would a successful demonstration in some other parish. This fact led to the decision to transfer the nurse to the parish of Clarendon on the 1st July. After two weeks it was suddenly decided that the Medical Officer of Health for this parish be allowed a three months leave of absence. This parish was selected largely because Dr. Escoffery was Medical Officer of Health, and it was deemed unwise, in view of his impending absence, to continue the programme in Clarendon. At the end of July, therefore, the nurse was transferred to the parish of St. Catherine. From the standpoint of demonstration this was probably a wise choice, not only because St. Catherine probably contained the largest number of cases of tuberculosis of any parish in the island outside of Kingston and St. Andrew, but also because of the extensive poverty which extended through a large portion of the parish. Such conditions rendered the nurse's activities most difficult and a challenge to her resourcefulness. It was felt that any demonstrable success in the public health nursing programme in this parish would considerably influence any possible extension of the programme to other parts of the island.

Because of the various factors involved in the St. Catherine problem, it was decided to increase the nursing staff by adding a second nurse; this step was taken in July, Nurse Fitz Ritson being added to the staff. A summary of the activities of the two nurses for the entire year including operations in Manchester, Clarendon and St. Catherine is of interest and as follows:—

Home visits	1,699
Total mileage	13,077
Average miles per home visited	7.7
Average miles per month per nurse	817
Average home visits per month per nurse ..	94
Average number of tuberculosis cases visited per month per nurse	32.8
Number of clinics attended per month per nurse	4
Number of health talks given by nurses for entire year	13
Number of new cases of tubrerculosis discovered inindependently by nurses	26

Some of the difficulties which have materially influenced the nursing activities during the year should be noted. While some of these are unfortunate, they have a direct bearing on the total amount of work accomplished by the nurses, and also furnish experience of value in future planning. Thus should be mentioned the difficulty of transportation. Much of the country traversed by the nurses is hilly, and even mountainous, with exceedingly poor Parochial Roads; these facts have contributed to the demolishment of one of the cars used in the demonstration.

The aims of the rural public health nursing demonstration have been to impress upon local responsible individuals the need and importance of such service when rendered by a well-trained and qualified nurse. Although emphasis has been placed upon the tuberculosis problem, the nurses are instructed to extend their services to all types of illnesses—they have been instructed to be constantly on the watch for suspicious cases of tuberculosis; to disseminate information regarding health problems, hygiene and sanitation; they have rendered nursing services of a type hitherto unknown in Jamaica to sick individuals in the rural parts of the island in which they have operated; they have assisted at Clinics for malaria, yaws, typhoid fever and venereal diseases; they have themselves given a large number of typhoid inoculations, thus assisting the Medical Officer of Health; they have made contact with influential individuals in the parish, explaining the work and its objectives; they have reached a class of rural population to whom public health education and nursing service has never been known, and a section of the population for whom medical service is inadequate; they have thus been able to render valuable service not only to patients, but also to the District Medical Officers. That the services rendered by the public health nurse in influencing public opinion has been of some avail, was demonstrated in July when the Parochial Board of Manchester proposed a resolution, which was passed unanimously, requesting the Central Government to install in the parish three well-trained public health nurses, the cost for such service to be divided equally between the Central Government and the Parochial Board of the parish.

A further aim of the rural public health nursing demonstration has been to impress Government with the need and the value of such service. In a measure this has also been realised, for since the inauguration of the demonstration Government has undertaken to give five district nurses additional training, which will better fit them for rural public health nursing; and there is every expectation that this programme will be extended and improved by Government. On the whole, it is believed that the first steps in demonstrating the value of public health nursing in Jamaica have been successful, and this in spite of the fact that the nurses available for such service have not had previous public health training or experience. It isnurses, however, of this type upon which depends the future development of the public health programme in Jamaica, and although such nurses are devoid of some of the essentials, many represent individuals who possess qualification and and aptitude which are necessary for successful public health. nurses. The need is great and a beginning must be made with material available in hopes that the future may make possible the better training of candidates for the service. The need for better trained public health nurses suggests the importance of sending a few individuals away from the island for this training under Fellowship Grants. Individuals so trained might be utilised later as teachers and supervisors.

III. *Special Activities.*—

Under this heading are included visits to parishes for the purpose of discussing local public health problems, particularly those related to tuberculosis, with members of Parochial Boards and lay groups. Two visits were made to the parish of Manchester and one visit to the parish of St. Mary.

During the year two papers covering work completed in Jamaica on the subjects of tuberculosis have been published in the American Review of Tuberculosis, namely, "A Study of Infection was Indicated by the Tuberculin Test" C. W. Wells and H. H. Smith, July, 1936. "The Intensity of the Tuberculin Reaction and Frequency of Demonstrable Tuberculosis Lesions", C. W. Wells and H. H. Smith, September, 1936. A third paper has also been submitted during the year, namely, "Tuberculosis in Contacts of Children who React to Tuberculosis," C. W. Wells; this paper has been accepted by the American Review of Tuberculosis, and will probably be published during 1937.

III.—Special Tuberculosis Studies at the Mental Hospital and Stony Hill Industrial School.

By Dr. E. W. Flahiff.

During the year 1936, the work at the Mental Hospital proceeded along the same general lines as in previous years.

In Table I is presented the results of tuberculin tests and X-ray examination of new admissions during the year 1936. It may be seen that there were 546 new admissions to the institution, of whom 262, or 48.0%, were males, and 284, or 52.0%, were females. Of these 546 new admissions, 452 (82.8%) received the tuberculin test within one month after admission (84.9% were tested in 1935). 82.4% of the males were tested, and 83.1% of the females. 175 (81.0%) of the males were tuberculin positive, and 161 (68.2%) of the females. As in all previous years, the number of females found negative to tuberculin was much greater than that of the males.

Of the 75 females found to be negative to 1.0 mg. of O.T., 32 received intracutaneous vaccination with heat-killed tubercle bacilli, but 13 of these were discharged before the end of the year, and 2 died. One old vaccinated case was re-admitted and discharged again during the year, and one old vaccinated case was re-admitted and died during the year. 34 of the tuberculin negative admissions acted as controls for this group of vaccinated cases, but 11 of these were discharged, and 2 died, before the end of the year. Two old controls were re-admitted and were still in the institution at the end of the year. Two other old controls were re-admitted and discharged again during the year. One old control was re-admitted and died before the end of the year. Two other tuberculin negative female admissions were not suitable for either group.

20 of the 41 male negative admissions were allotted to the vaccinated group, but 5 of these were discharged before the end of the year and 2 died. 19 of the 41 negative admissions acted as controls, but 5 were discharged and 3 died before the end of the year. The two other tuberculin negative admissions were not suitable for either group.

Table I. The Results of Tuberculin Tests and X-ray Examinations of New Admissions to the Mental Hospital during 1936.

Age.	Sex.	Total Number in Group.	Number with complete Tuberculin Tests.	Number Tuberculin Positive.	Number Tuberculin Negative.	Percentage Tuberculin Positive.	X-RAY DIAGNOSIS.													
							Calcified Pulmonary Nodules.	Pulmonary Infiltration Childhood.	Tracheo-Bronchial Lymph Nodes.		Latent Apical.	Pulmonary Tuberculosis.		No tuberculosis.	Suspected Tuberculosis.	Type Tuberculosis.				Total Number X-rayed.
									Calcified.	Caseous.		Sputum Positive.	Sputum Negative			Diagnosis Incomplete	Child-hood.	Adult.	Undetermined.	
0-9	M	2	1	1	..	100.0	..	..	..	..	..	..	..	2	..	..	..	..	..	2
	F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10-19	M	20	20	14	6	70.0	..	..	2	..	..	..	..	17	..	..	..	..	..	19
	F	23	18	7	11	38.8	1	..	1	..	..	..	..	19	..	..	..	..	..	21
20-29	M	88	73	55	18	75.3	2	..	1	..	..	..	..	76	1	..	..	..	..	80
	F	95	88	55	33	62.5	3	..	3	..	1	..	2	83	..	1	1	1	..	93
30-39	M	74	64	56	8	87.5	3	..	1	..	..	..	3	59	1	..	..	2	1	67
	F	71	56	43	13	76.8	2	..	3	..	..	..	4	52	3	..	1	2	1	64
40-49	M	49	35	30	5	85.7	2	..	..	..	1	..	1	35	..	..	1	..	..	39
	F	44	33	24	9	72.7	..	..	..	..	1	..	1	32	1	..	..	..	1	35
50-59	M	11	10	6	4	60.0	1	..	1	..	..	..	..	7	1	..	..	..	..	10
	F	28	25	19	6	76.0	..	..	1	..	..	..	1	22	1	..	..	1	..	25
60†	M	18	13	13	..	100.0	..	..	1	..	..	..	..	13	1	1	..	..	..	16
	F	23	16	13	3	81.2	..	..	1	..	..	..	..	13	..	..	..	..	..	14
Total	M	262	216	175	41	81.0	8	..	6	..	1	..	4	209	4	1	1	2	1	233
	F	284	236	161	75	68.2	6	..	9	..	2	..	8	221	5	1	2	4	2	252
Total	..	546	452	336	116	74.3	14	..	15	..	3	..	12	430	9	2	3	6	3	485

Referring again to Table I, it may be seen that 485 (88.8%) received X-ray examination of the chest (86.7% in 1935). Among these patients were found 12 cases of manifest tuberculosis (2.5%); 3 latent infiltrative lesions (0.6%) and 29 calcified lesions (6.0%).

In addition to the new admissions, 424 old cases were re-x-rayed at intervals (i.e., vaccinated and control cases and old tuberculin positive admissions). A total of 1,347 x-rays were taken during the year (1,286 in 1935).

Table II.—Tuberculosis in the Control Group.

Name.	Age.	Date of Admission.	Date of Diagnosis.	Type of Tuberculosis Lesion.	Method of Diagnosis.
*Balgan (Coolie)	56	25.3.36	3.12.36	Pul. Tbc. Ad. Ty. III	X-ray
Levi Mitchell	28	11.1.36	26.9.36	Pul. Tbc. Ch. Ty. III	X-ray
Orval Parson	24	29.2.36	5.11.36	Pul. Tbc. Und. Ty. II	X-ray
Penelope Bish	50	1.6.36	4.12.36	Pul. Tbc. Ch. Ty. III	X-ray
Laura A. Burke	40	29.5.36	9.10.36	Pul. Tbc. Ch. Ty. III	X-ray
Beryl Livingston	42	20.5.35	24.9.36	Pul. Tbc. Ch. Ty. IV	X-ray
Jane Eliza Davis	19	5.4.35	9.10.36	Pul. Tbc. Ch. Ty. III	X-ray
Gertrude Myrie	26	19.11.35	4.12.36	Pul. Tbc. Ch. Ty. III	X-ray
Beatrice Christie	38	10.7.35	6.11.36	Pul. Tbc. Ch. Ty. III	X-ray
Daisy Louise Weir	26	17.10.35	9.10.36	Pul. Tbc. Ch. Ty. II	X-Ray
Edith Brown	25	3.3.36	26.7.36	Pul. Tbc. Ch. Ty. III	Post Mortem
Henry S. Greaves	31	14.2.36	19.6.36	Pul. Tbc. Ch. Ty. V.	Post Mortem
John Baker	23	13.7.35	30.1.36	Pul. Tbc. Ad. Ty. V	Post Mortem
Leston L. Johnson?	22	13.10.33	7.5.36	Pul. Tbc. Ch. Ty. V	Post Mortem
Ruthlyn Greenwood	20	6.11.34	15.11.36	Pul. Tbc. Ch. Ty. V	Post Mortem
Clementina Haughton	20	22.10.35	20.8.36	Pul. Tbc. Ch. Ty. V	Post Mortem
*Agnes Smith	50	12.11.35	30.3.36	Pul Tbc. Ad. Ty. II	Post Mortem
Rhoda Kerr	69	15.6.34	12.3.36	Pul. Tbc. Ch. Ty. IV	X-ray
Iris Campbell	23	19.2.34	4.9.36	Pul. Tbc. Ch. Ty. II	X-ray
Theophilus James	37	10.3.36	15.9.36	Pul. Tbc. Ch. Ty. III	X-ray
Rebecca Anderson	39	2.1.35	19.8.36	Pul. Tbc. Ch. Ty. V	Post Mortem
Clifford Campbell	29	12.10.34	24.7.36	Pul. Tbc. Ad. Ty. III	X-ray
**Ellen Watt	16	30.4.36	8.7.36	Pul. Tbc. Ch. Ty. II	Post Mortem

*Probably admitted with tuberculosis—first X-ray suspicious.

**First X-ray after admission was read "Motion—probably negative." The patient was so violent that it was impossible to get a good X-ray picture.

In Table II is presented a list of the controls and vaccinated cases who have been diagnosed during 1936 as having pulmonary tuberculosis. From the footnotes it may be seen that some of these cases were very probably admitted to the Institution with manifest disease. There has been a considerably greater amount of tuberculosis appearing in these groups during the past year than in previous years. The death rate from tuberculosis in the institution as a whole, has not varied from that for previous years. In addition, there has been no considerable increase in the number of manifest cases of tuberculosis in the institution at any one time during the year. It is my impression that the increase in the number of cases of tuberculosis in these two groups is due to the increased numbers in both.

During the year 1936 there were 213 patients discharged from the institution, 105 of whom had been admitted during the year. 82 of the total deaths for the year occurred among individuals admitted during the year. Therefore, the total deaths and discharges among patients admitted during the year was 187 (or 34.2% of the total admissions (35.5% in 1935). Among these 213 discharges was a total of 22 female vaccinated cases and 12 male controls. These, of course, include the vaccinated and control cases previously mentioned who were admitted this year and discharged this year. During the year there were 242 deaths (227 in 1935). In Table III is shown the amount of tuberculosis found among those who were admitted during 1936 and died the same year. 14 of the deaths were due to tuberculosis (17.1%) From the information given in the footnotes in this table it seems highly probable that 7 of these cases were admitted to the institution with tuberculosis This conclusion is based on an early positive X-ray picture soon after admission, or death with advanced tuberculosis within a short period after admission.

Table III.—Deaths among cases admitted during 1936 who died the same year.

Age.			10-19		20-29		30-39		40-49		50-59		60+		Total.
Sex.			M	F	M	F	M	F	M	F	M	F	M	F	
P.M.	Tbc.	Latent	..	1	3	2	2	1	3	1	..	..	..	2	15
		Manifest	..	1	..	3*	3*	4*	1	1**	..	..	..	..	13
	No Tbc.		1	..	5	6	5	9	8	1	1	2	3	2	43
No P.M.	Tbc.	Latent	..	..	..	..	..	..	..	..	..	..	..	..	..
		Manifest	..	..	1	..	..	..	..	..	..	..	..	..	1
	No Tbc.		..	..	1	..	1	..	1	1	3	..	2	1	10
Total			1	2	10	11	11	14	13	4	4	2	5	5	82

*2 admitted with tuberculosis.
**admitted with tuberculosis.

In Table IV the remainder of the deaths are tabulated as occurring in 1936 among individuals admitted to the institution prior to 1936. It may be seen that 38 of the 160 deaths were due to tuberculosis (23.7%).

Table IV.—Deaths in 1936 among cases admitted prior to 1936.

Age.			10-19		20-29		30-39		40-49		50-59		60+		Total.
Sex.			M	F	M	F	M	F	M	F	M	F	M	F	
P.M.	Tbc.	Latent	3	2	6	8	4	9	3	4	..	2	2	2	45
		Manifest	3	1	7	10	3	4	1	3	2	1	..	1	36
	No Tbc.		2	4	7	6	11	6	6	5	3	4	2	3	59
No P.M.	Tbc.	Latent	..	..	..	..	..	..	1	..	..	..	..	..	1
		Manifest	..	..	2	..	..	..	..	..	..	..	..	..	2
	No Tbc.		..	..	1	1	1	4	4	1	2	..	2	1	17
Total			8	7	23	25	19	23	15	13	7	7	6	7	160

While the percentage of deaths due to tuberculosis among individuals admitted during 1936, is considerably higher than in other years, the deaths among individuals admitted prior to 1936, and dying during 1936, are almost correspondingly fewer, so that the total number of deaths from tuberculosis during the year is approximately the same as in all other years.

Post mortems were obtained on 211 (87.2%) of the 242 deaths (84.6% in 1935). Among these deaths were 7 female vaccinated cases and 12 female controls, 6 male vaccinated cases and 8 male controls. These figures, of course, include the vaccinated and control cases mentioned before as being admitted this year and dying this year.

The lungs of 211 cases were kept for X-ray examination of the excised specimen and careful dissection.

The Present Status of the Vaccinated and Control cases and the Tuberculin Positive admissions to the Mental Hospital.

In this section of the annual report we present the present status of the vaccinated and control cases and the tuberculin positive admissions from the beginning of the study of intracutaneous vaccination with heat-killed tubercle bacilli in June, 1932, up until the end of December, 1936.

The tables submitted at the end of this section show the status of these various groups at stated periods after their admission. The difference in the total number between any two periods of time represents the number of the individuals followed for only the shorter period of time.

Since the beginning of this work in 1932, there have been 201 individuals in the vaccinated group, 193 in the control group and 1,277 in the group of tuberculin positive individuals, tested within one month of their admission. These totals do not agree with the totals shown in the 1935 report plus the individuals added to these groups in 1936. The explanation for this lies in the fact that in previous years we have included individuals who were actually tested within one month of their admission but whose test had been done previous to June 1932. It seems to us that since the present method of vaccination was only begun in June, 1932, it is not reasonable to include any individuals tested before that time. Therefore in this report, no individual is included who entered the institution before the present method of administration of the vaccine was begun.

As will be seen in the summary table, 12 cases of manifest tuberculosis have developed among the vaccinated individuals, 29 cases have developed among the controls; and 69 cases among the tuberculin positive admissions. A number of these cases of manifest tuberculosis undoubtedly had disease when they were admitted to the institution. We base this conclusion on either (1) positive X-ray within a short period after admission, or (2) death within a short period of time after admission with advanced disease. Deducting these cases from the totals, we find that 8 cases of manifest tuberculosis have developed among the vaccinated individuals; 26 among the controls; and 51 among the tuberculin positive individuals. The percentage of individuals who have developed tuberculosis in each of these groups is therefore :

Vaccinated—8 cases, or 4.1% with manifest tuberculosis.
Controls—26 cases, or 13.7% with manifest tuberculosis.
Tuberculin
Positive Admissions—51 cases, or 4.0% with manifest tuberculosis.

In the vaccinated group the diagnosis of tuberculosis was confirmed in all 12 cases, 8 by post mortem 2 no post mortem but positive X-ray, and 2 still living, both with positive X-rays.

In the group of tuberculin positive admissions, 38 were confirmed by post mortem, 5 had no post mortem, but had positive X-rays, 7 had no post mortem and no-X-ray. 19 of these cases are still living and have positive X-rays.

In previous years we have included a table in the report showing the percentage of tuberculin reactors among the vaccinated and control groups at varying periods of observation. This table is not included in the present report, since the high incidence of tuberculosis in the institution must affect the percentage of reactors in both groups to a considerable extent. We feel that more reliable results as to the degree of hypersensitiveness produced by the vaccine are found in our studies at the Stony Hill Industrial School. Discussion of this phase of the work will therefore be left until the following section of this report.

In a letter to the Home Office following the submission of our semi-annual report for 1936, we called attention to the possibility that individuals admitted to the institution with the more severe reactions to tuberculin and no demonstrable X-ray lesions, probably have a higher degree of immunity. In the second summary table submitted at the end of this section, we have subdivided all tuberculin positive admissions according to the severity of their reaction on admission. It will be seen from this table that 408 individuals were admitted with a 3-plus to .01 mg. reaction. Among these individuals 13 cases of manifest tuberculosis were found, 7 of which were probably admitted with tuberculosis. Among the 315 individuals with a 2-plus reaction to .01 mg. we found 10 cases of manifest tuberculosis. 225 individuals were admitted with a 1-plus reaction to .01 mg. and among these 13 cases of manifest tuberculosis were found, 2 of which were probably admitted with tuberculosis. Among the 329 individuals admitted who were positive only to 1.0 mg. we found 33 cases of manifest tuberculosis, 5 of which were probably admitted with manifest disease. The percentage of individuals who have developed tuberculosis in the institution, in each of these groups, is therefore:

3-plus reactors to .01 mg.	..	..	1.5%
2-plus reactors to .01 mg.	..	..	1.9%
1-plus reactors to .01 mg.	..	..	4.9
Positive to 1.0 mg. ..	..	..	8.6%

This observation would tend to show that individuals admitted with a strong reaction to tuberculin and no evidence of manifest disease, have a higher degree of immunity than those with a weak reaction or negative tuberculin. In order to show that there is no accidental grouping of individuals according to their length of residence in the institution, the following table is submitted.

The number of cases of Pulmonary Tuberculosis, according to the original Tuberculin Reaction, and the Total number of individuals in each group at various periods of observation.

Period of Observation.	Original Tuberculin Reaction.					
	***to .01 mg.	**to .01 mg.	*to .01 mg.	Positive 1.0 mg.	Vaccinated.	Controls.
Under 6 Months	0 (401)	0 (311)	0 (223)	2 (324)	0 (197)	2 (190)
6-12 Months	1 (236)	1 (193)	1 (141)	6 (203)	2 (124)	8 (111)
12-18 Months	3 (160)	2 (141)	3 (98)	1 (143)	0 (77)	7 (64)
18-24 Months	1 (115)	0 (99)	3 (69)	4 (112)	0 (46)	5 (35)
2-3 Years	0 (87)	3 (84)	2 (63)	10 (87)	5 (36)	2 (22)
3 Years Plus	1 (37)	0 (54)	2 (37)	5 (53)	1 (18)	2 (13)

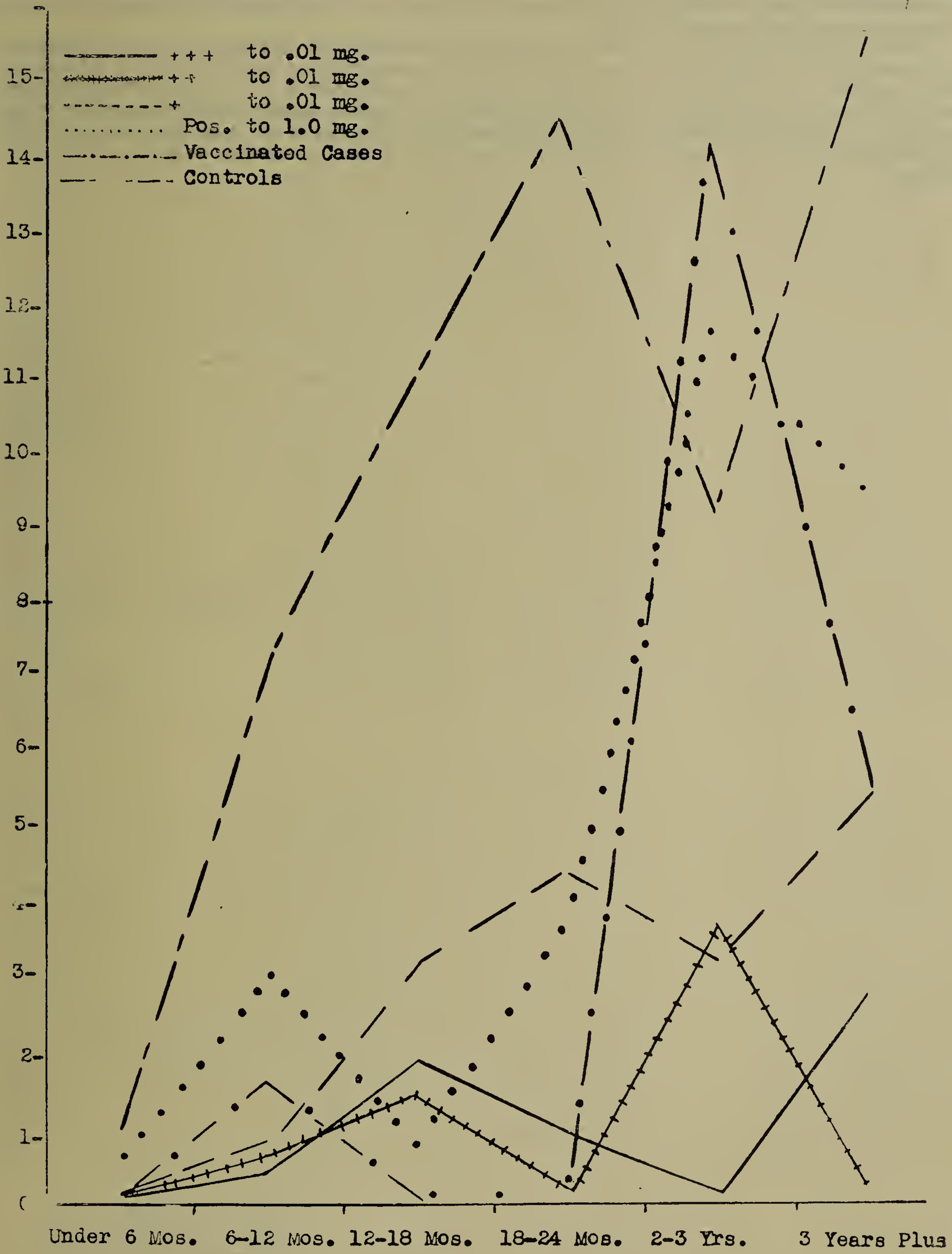
The above table shows the number of individuals in each group at various periods of observation, and also the number of cases of manifest tuberculosis at each of these periods. The free number in each block represents the number of cases of tuberculosis which developed during that period, and the bracketed number in the lower part of each block represents the number of individuals under observation for that period of time. It will be seen from this table that the losses in each group are comparable throughout. It would therefore appear that the percentage of individuals developing manifest tuberculosis at each period of time does represent the susceptibility of each group.

In the following table we present the percentage of individuals in each group, from the above table, who have developed tuberculosis at the stated period of time. The graph which follows, graphically represents the results shown in this table.

The percentage of individuals in each group, according to the original Tuberculin Reaction, who have developed Tuberculosis at stated periods of observation.

Period of Observation.	Original Tuberculin Reaction.					
	*** to .01 mg.	**to .01 mg.	* to .01 mg.	Positive 1.0 mg.	Vaccinated.	Controls.
Under 6 Months	0.0	0.0	0.0	0.6	0.0	1.0
6-12 Months	0.4	0.5	0.7	3.0	1.6	7.2
12-18 Months	1.9	1.4	3.1	0.7	0.0	10.9
18-24 Months	0.9	0.0	4.4	3.6	0.0	14.3
2-3 Years	0.0	3.6	3.2	11.5	13.9	9.1
3 Years Plus	2.7	0.0	3.4	9.4	5.5	15.4

The Percentage of Individuals in Each Group, According to the Original Tuberculin Reaction, Who Have Developed Tuberculosis at Stated Periods of Observation.



From the graph it would seem that the 2-and 3- plus reactors to .01 mg. have been fairly well protected from tuberculosis throughout the entire period of observation. 1-plus reactors to .01 mg. have been almost as well protected throughout most of this period of time. The individuals who were positive only to 1.0 mg. have had a fair degree of protection for a period of two years and then show a marked increase in the percentage who develop pulmonary tuberculosis. This observation is almost identical with that shown for the vaccinated cases. Among the controls there appears to be a more or less steady increase in the amount of disease among these individuals that would lead one to suspect that they have little or no protection. It seems to me that a comparison of the vaccinated cases with the 1.0 mg. reactors is extremely interesting, in that there is a possibility that the loss of protection in both instances is due to a gradual loss of their sensitivity to tuberculin. This seems to be supported by the greater, continued protection among the reactors to .01 mg.

During the last three months of 1936 we changed the method of the administration of the vaccine with the approval of Dr. Opie. Under the new method four intracutaneous vaccinations were administered of 0.1 mg. each. This was followed by a tuberculin test, then a rest period of six weeks at the end of which another tuberculin test was taken. If both these tests were negative, further adminstration of the vaccine was given. This method resulted in definite papulae, but at the end of the year there was no evidence of ulceration in any of the cases. It is too early yet to draw definite conclusions as to the efficacy of this method.

A SUMMARY OF THE FOLLOW-UP OF THE VACCINATED, CONTROL AND TUBERCULIN POSITIVE GROUPS FROM THE BEGINNING OF THE STUDY TO DECEMBER, 1936.

Time from Admission.			Under 6 Months.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	Sex.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Vaccinated	68	M	1	3	..	1	8	4	..	..	44	7	..	..
June, 1932 to	133	F	4	6	3*	..	21	12	..	..	61	26	..	..
December, 1936	201	T	5	9	3	1	29	16	..	..	105	33	..	..
Controls	66	M	1	6	1	..	2	14	..	1	11	30	..	..
June, 1932 to	127	F	..	8	4 ***	2	8	22	..	1	33	49	..	..
December, 1936	193	T	1	14	5	2	10	36	..	2	44	79	..	..
Tuberculin Positive Admissions	656	M	54	..	4†	10	128	..	1*	3	149	..	1*	6
June, 1932 to	621	F	29	..	7‡	11	112	..	..	4	450	..	1*	7
December, 1936 ..	1,277	T	83	..	11	21	240	..	1	7	399	..	2	13
				6 to	12	Months.								
Vaccinated	68	M	3	..	1*	..	5	..	1	1	31	3	..	..
June, 1932 to	133	F	2	..	1	..	10	7	..	1	42	16	..	..
December, 1936	201	T	5	..	2	..	15	7	1	2	73	19	..	..
Controls	66	M	2	3	1	..	1	4	..	..	8	17	3	..
June, 1932 to	127	F	..	2	2	..	1	9	..	2	28	26	2	..
December, 1936	193	T	2	5	3	..	2	13	..	2	36	43	5	..
Tuberculin Positive Admissions	656	M	30	..	8**	4	44	..	..	1	288	..	..	6
June, 1932 to	621	F	13	..	4*	8	40	..	..	1	322	..	**2	2
December, 1936 ..	1,277	T	43	..	12	12	84	..	..	2	610	..	2	8

* One admitted with tuberculosis.
** Two admitted with tuberculosis.
*** Three admitted with tuberculosis.
† Five admitted with tuberculosis.
‡ All admitted with tuberculosis.

A Summary of the Follow-up of the Vaccinated, Control and Tuberculin Positive Groups from the Beginning of the Study to December, 1936, *contd.*

Time from Admission.			12 to 18 Months.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	Sex.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Vaccinated	68	M	1	. .	. .	. .	4	1	. .	. .	19	2	. .	1
June, 1932 to . .	133	F	2	1	. .	. .	3	. .	. .	. .	31	12	. .	. .
December, 1936	201	T	3	1	. .	. .	7	1	. .	. .	50	14	. .	1
Controls	66	M	. .	. .	1	. .	. .	. .	. .	1	6	10	. .	. .
June, 1932 to	127	F	2	1	3	. .	. .	3	. .	. .	16	17	3	1
December, 1936	193	T	2	1	4	. .	. .	3	. .	1	22	27	3	1
Tuberculin Positive Admissions	656	M	9	. .	2	4	22	. .	. .	1	218	. .	2	1
June, 1932 to	621	F	11	. .	4	1	24	. .	. .	2	233	. .	2*	4
December, 1936	1,277	T	20	. .	6	5	46	. .	. .	3	453	. .	4	5
			18 Months to 2 Years.											
Vaccinated	68	M	. .	. .	. .	. .	. .	1	. .	. .	12	2	. .	. .
June, 1932 to	133	F	. .	. .	. .	. .	. .	. .	. .	. .	21	10	. .	. .
December, 1936	201	T	. .	. .	. .	. .	. .	1	. .	. .	33	12	. .	. .
Controls	66	M	. .	. .	1	. .	. .	1	. .	. .	4	6	. .	. .
June, 1932 to	127	F	. .	1	2	. .	. .	. .	. .	. .	10	8	2	. .
December, 1936	193	T	. .	1	3	. .	. .	1	. .	. .	14	14	2	. .
Tuberculin Positive Admissions	656	M	6	. .	4	3	4	. .	. .	. .	166	. .	1	. .
June, 1932 to	621	F	2	. .	2	4	5	. .	. .	. .	194	. .	1	3
December, 1936	1,277	T	8	. .	6	7	9	. .	. .	. .	360	. .	2	3

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* One admitted with tuberculosis.

A SUMMARY OF THE FOLLOW-UP OF THE VACCINATED, CONTROL AND TUBERCULIN POSITIVE GROUPS FROM THE BEGINNING OF THE STUDY TO DECEMBER, 1936, *contd.*

Time from Admission.			2 Years to 3 Years.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	Sex.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Vaccinated	68	M	..	..	1	..	1	..	..	..	6	4	..	1
June, 1932 to	133	F	..	..	3	..	..	..	..	..	11	8	1	..
December, 1936	201	T	..	..	4	..	1	..	..	..	17	12	1	1
Controls	66	M	..	..	..	..	..	..	..	..	3	2	..	..
June, 1932 to	127	F	..	1	2	..	..	..	..	..	6	5	..	3
December, 1936	193	T	..	1	2	..	..	..	..	..	9	7	..	3
Tuberculin Positive Admissions	656	M	2	..	7	3	3	..	..	..	128	..	2	3
June, 1932 to	621	F	5	..	4	2	6	..	..	..	147	..	2	7
December, 1936	1,277	T	7	..	11	5	9	..	..	..	275	..	4	10
			3 Years Plus.											
Vaccinated	68	M	..	..	..	..	..	..	..	..	4	2	..	..
June, 1932 to	133	F	..	..	1	..	..	..	..	..	7	3	..	1
December, 1936	201	T	..	..	1	..	..	..	..	..	11	5	..	1
Controls	66	M	..	..	1	..	..	..	..	..	..	..	..	..
June, 1932	127	F	..	..	..	..	..	..	..	..	6	3	1	2
December, 1936	193	T	..	..	1	..	..	..	..	..	6	3	1	2
Tuberculin Positive Admissions	656	M	2	..	3	2	3	..	..	..	73	..	..	5
June, 1932 to	621	F	4	..	1	3	2	..	..	..	71	..	4	8
December, 1936	1,277	T	6	..	4	5	5	..	..	..	144	..	4	13

Vaccinated Cases	12 Cases—Manifest Tuberculosis. 10 Dead; 8 confirmed by P.M.; 2 no P.M. but Positive X-ray 2 Still Living: Both Positive X-ray.
Control Cases	29 Cases—Manifest Tuberculosis. 18 Dead: 16 confirmed by P.M.; 2 no P.M. but Positive X-ray 11 Still Living: All Positive X-ray.
Tuberculin Positive Admissions	69 Cases—Manifest Tuberculosis: 50 Dead: 38 confirmed by P.M.: 7 no P.M. and no X-ray 5 no P.M. but Positive X-ray. 19 Still Living: All Positive X-ray.

A Summary of the Follow-up of the Tuberculin Positive Admissions from June, 1932, to December, 1936, according to the Severity of their Original Reaction.

Time from Admission.			Under 6 Months.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	Sex.	Tuberculin Positive.	Tuberculin Negative	Manifest Tuberculosis.	Latent Tuberculosis	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Three-Plus to .01 mg. ..	207	M	16	..	2**	2	38	..	..	1	143	..	1*	4
	201	F	5	..	1*	3	33	..	..	2	155	..	..	2
	408	T	21	..	3	5	71	..	..	3	298	..	1	6
Two-Plus to .01 mg. ..	180	M	10	..	1*	6	35	..	1*	1	125	..	..	1
	135	F	5	..	1*	1	28	..	..	1	97	..	..	2
	315	T	15	..	2	7	63	..	1	2	222	..	..	3
One-Plus to .01 mg. ..	124	M	18	..	1*	2	24	..	..	1	77	..	..	1
	101	F	4	..	1*	3	21	..	..	..	72	..	..	..
	225	T	22	..	2	5	45	..	..	1	149	..	..	1
Positive to 1.0 mg. ..	145	M	10	..	..	...	31	..	..	..	104	..	..	..
	184	F	15	..	4**	4	30	..	..	1	126	..	1*	3
	329	T	25	..	4	4	61	..	..	1	230	..	1	3
				6 to 12 Months.										
Three-Plus to .01 mg. ..	207	M	5	..	3**	3	9	..	..	..	83	..	..	4
	201	F	4	..	..	3	15	..	..	..	106	..	..	1
	408	T	9	..	3	6	24	..	..	..	189	..	..	5
Two-Plus to .01 mg. ..	180	M	7	..	1	..	12	..	..	..	90	..	..	1
	135	F	3	..	..	3	9	..	..	..	65	..	1*	1
	315	T	10	..	1	3	21	..	..	..	155	..	1	2
One-Plus to .01 mg. ..	124	M	12	..	..	1	10	..	..	..	48	..	..	..
	101	F	3	..	1	1	10	..	..	..	55	..	..	..
	225	T	15	..	1	2	20	..	..	..	103	..	..	..
Positive to 1.0 mg. ..	145	M	6	..	4	..	13	..	..	1	67	..	..	1
	184	F	3	..	3*	1	6	..	..	1	96	..	1*	..
	329	T	9	..	7	1	19	..	..	2	163	..	1	1

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* One admitted with tuberculosis.
**Two admitted with tuberculosis.

A SUMMARY OF THE FOLLOW-UP OF THE TUBERCULIN POSITIVE ADMISSIONS FROM JUNE, 1932, TO DECEMBER, 1936, ACCORDING TO THE SEVERITY OF THEIR ORIGINAL REACTION.

Time from Admission.			12 to 18 Months.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	SEX.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Three-Plus to .01 mg. ..	207	M	2	..	1	..	3	..	..	..	62	..	1	1
	201	F	5	..	1	1	7	..	..	..	73	..	1*	2
	408	T	7	..	2	1	10	..	..	..	135	..	2	3
Two-Plus to .01 mg. ..	180	M	4	..	..	1	9	..	..	1	68	..	1	..
	135	F	1	..	1	..	5	..	..	1	48	..	..	1
	315	T	5	..	1	1	14	..	..	2	116	..	1	1
One-Plus to .01 mg. ..	124	M	..	..	1	3	3	..	..	..	38	..	..	
	101	F	2	..	1	..	5	..	..	..	43	..	1	1
	225	T	2	..	2	3	8	..	..	..	81	..	1	1
Positive to 1.0 mg.	145	M	3	..	..	..	7	..	..	..	50	..	..	..
	184	F	3	..	1	..	7	..	..	1	71	..	..	..
	329	T	6	..	1	..	14	..	..	1	121	..	..	..
			18 Months to 2 Years.											
Three-Plus to .01 mg. ..	207	M	1	..	..	1	1	..	..	..	46	..	..	..
	201	F	1	..	..	1	4	..	..	..	57	..	1	2
	408	T	2	..	..	2	5	..	..	..	103	..	1	2
Two-Plus to .01 mg. ..	180	M	2	..	..	..	3	..	..	..	51	..	..	..
	135	F	..	..	..	1	..	..	..	..	41	..	..	1
	315	T	2	..	..	1	3	..	..	..	92	..	..	1
One-Plus to .01 mg. ..	124	M	1	..	2	1	..	..	..	..	28	..	1	..
	101	F	..	..	..	1	..	..	..	..	35	..	..	..
	225	T	1	..	2	2	..	..	..	..	63	..	1	..
Positive to 1.0 mg.	145	M	2	..	2	1	..	..	..	..	41	..	..	..
	184	F.	1	..	2	1	1	..	..	..	61	..	..	..
	329	T	3	..	4	2	1	..	..	..	102	..	.	..

* One admitted with tuberculosis.

A SUMMARY OF THE FOLLOW-UP OF THE TUBERCULIN POSITIVE ADMISSION FROM JUNE, 1932, TO DECEMBER, 1936, ACCORDING TO THE SEVERITY OF THEIR ORIGINAL REACTION.

Time from Admission.			2 Years to 3 Years.											
Status of Case.			Dead.				Discharged.				Present.			
Name of Group.	Total Number in Group.	SEX.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.	Tuberculin Positive.	Tuberculin Negative.	Manifest Tuberculosis.	Latent Tuberculosis.
Three-Plus to .01 mg. ..	207	M	..	..	..	1	1	..	..	..	35	..	..	2
	201	F	..	..	..	..	2	..	..	..	45	..	..	1
	408	T	..	..	..	1	3	..	..	..	80	..	..	3
Two-Plus to .01 mg. ..	180	M	..	..	1	..	..	..	..	..	46	..	1	..
	135	F	3	..	1	..	1	..	..	..	28	..	..	3
	315	T	3	..	2	..	1	..	..	..	74	..	1	3
One-Plus to .01 mg. ..	124	M	1	..	2	..	..	..	..	..	23	..	..	..
	101	F	..	..	..	..	1	..	..	..	34	..	..	2
	225	T	1	..	2	..	1	..	..	..	57	..	..	2
Positive to 1.0 mg.	145	M	1	..	4	2	2	..	..	..	24	..	1	1
	184	F	2	..	3	2	2	..	..	..	40	..	2	1
	329	T	3	..	7	4	4	..	..	..	64	..	3	2
					3 Years Plus.									
Three-Plus to .01 mg. ..	207	M	1	..	..	..	..	..	..	..	17	..	..	..
	201	F	1	..	..	..	1	..	..	..	16	..	1	..
	408	T	2	..	..	..	1	..	..	..	33	..	1	..
Two-Plus to .01 mg. ..	180	M	1	..	..	1	1	..	..	..	30	..	..	2
	135	F	..	..	..	..	..	..	..	..	18	..	..	1
	315	T	1	..	..	1	1	..	..	..	48	..	..	3
One-Plus to .01 mg. ..	124	M	..	..	1	1	1	..	..	..	11	..	..	2
	101	F	1	..	..	3	..	..	..	..	16	..	1	..
	225	T	1	..	1	4	1	..	..	..	27	..	1	2
Positive to 1.0 mg. ..	145	M	..	..	2	..	1	..	..	..	15	..	..	1
	184	F	2	..	1	..	1	..	..	..	21	..	2	7
	329	T	2	..	3	..	2	..	..	..	36	..	2	8

REPORT OF THE STUDY OF THE EFFECT OF VACCINATION WITH HEAT KILLED TUBERCLE BACILLI IN THE STONY HILL INDUSTRIAL SCHOOL.

During the year 1936, observations were continued at the Stony Hill Industrial School. As noted in previous reports, this is being done to show the efficacy of the vaccine in producing skin sensitivity to tuberculin, the degree of sensitiveness produced, and the length of time sensitiveness is maintained.

During 1936 there were 63 new admissions to the Industrial School, one of whom absconded soon after admission. The remaining 62 boys received tuberculin tests, of which 34 were positive and 28 negative. Of this latter group, 10 became vaccinated cases, 4 receiving the vaccine subcutaneously, and 6 also subcutaneously, but by a new method to be described later. 8 of the tuberculin negative admissions acted as controls for this group; 3 as controls for the subcutaneously vaccinated group, and 5 for the group vaccinated by the new method. One of these controls was discharged before the end of the year. The remaining 10 tuberculin negative individuals were held for the arrival of Dr. Freund from New York, in order that their method of vaccination might be determined by him.

The 62 new admissions all received x-ray examination of the chest, with the following results:

3	cases of Calcified Pulmonary Nodule
1	case of Caseous Lymph Nodes
3	cases of Calcified Lymph Nodes
4	cases of Diagnosis Incomplete
1	case of Pulmonary Infiltration Childhood Type
50	cases of No Evidence of Tuberculous Lesion

All the lesions noted above were found in tuberculin positive individuals.

The age distribution of the new admissions was as follows:—

10 were in the age group 5-9
53 were in the age group 10-14

During the year there were 74 boys dsischarged who had entered the institution previously to 1936. In this group were 19 controls, 14 of whom acted as controls for the intracutaneously vaccinated cases and 5 as controls for the subcutaneously vaccinated cases. 11 vaccinated cases were discharged, 10 of whom were in the group intracutaneously vaccinated, and one in the subcutaneously vaccinated group. There were no deaths during the year.

INTRACUTANEOUSLY VACCINATED CASES AND THEIR CONTROLS.

During 1936, all new admissions who were tuberculin negative were added to the subcutaneously vaccinated group, or acted as their controls. Therefore, the total number of vaccinated and control cases for the intracutaneous method remains the same as in previous years. At the end of 1936, we had 47 vaccinated cases and 43 controls still under observation. It will be noted from Table I that at the end of the 2 years observation period, only 4 controls were positive to tuberculin. 3 of these had only a mild reaction to 1.0 mg. of O. T., and the remaining individuals had a reaction of 3-plus to .01 mg.
At the end of the year this latter individual had shown no X-ray lesion.

Table I.—The tuberculin reaction in the vaccinated and control cases at certain periods during the time of observation

Group.	Total Number in Group.	After 6 Months observation.					After 12 months observation.					After 18 months observation.					After 2 years observation.				
		+++to .01 mg.	++to .01 mg.	+to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.	+++to .01 mg.	++to .01 mg.	+to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.	+++to .01 mg.	++to .01 mg.	+to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.	+++to .01 mg.	++to .01 mg.	+to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.
Vaccinated ..	65	10	7	11	23	14	..	5	4	25	20	2	3	11	15	17	1	8	13	10	9
Control ..	62	..	..	..	..	62	1	..	..	3	55	1	..	..	1	45	1	..	..	3	32

It is also of interest to note from this table the percentage of vaccinated cases tuberculin positive at various periods of observation:—

After 6 months:	51 (or 78.5% were tuberculin positive
	10 (or 15.4%) were +++ to .01 mg.
43.1%	7 (or 10.8% were ++ to .01 mg.
	11 (or 16.9%) were + to .01 mg.
	23 (or 35.4%) were positive to 1.0 mg.
After 12 months:	34 (or 63.0% were tuberculin positive
	None were +++ to .01 mg.
16.7%	3 (or 9.3%) were ++ to .01 mg.
	4 (or 7.4%) were + to .01 mg.
	25 (or 46.3%) were positive to 1.0 mg.
After 18 months:	31 (or 64.6%) were tuberculin positive
	2 (or 4.2%) were +++ to .01 mg.
33.3%	3 (or 6.2%) were ++ to .01 mg.
	11 (or 22.9%) were + to .01 mg.
	15 (or 31.3%) were positive to 1.0 mg.

After 2 years: 32 (or 78.0%) were tuberculin positive.
53.6% { 1 (or 2.4%) were +++ to .01 mg.
8 (or 19.5%) were ++ to .01 mg.
13 (or 31.7%) were + to .01 mg.
10 (or 24.4%) were positive to 1.0 mg.

From this record it will be seen that there is a considerable drop in the percentage of tuberculin reactors, and also in the degree of their sensitivity, as represented by the increasing number who were positive only to 1.0 mg. However, after this time there is a gradual increase at 18 months, and also at 2 years, in the percentage of tuberculin reactors, and at the same time an increase in their sensitivity as indicated by the decreasing numbers who were sensitive only to 1.0 mg. This increase has resulted in practically the same percentage of tuberculin reactors at the end of the 2-years observation as existed at the end of 6 months observation. This is shown by the lower percentage of reactors to only 1.0 mg. at the end of 2 years observation as compared with the percentage at the end of 6 months observation. It seems to me that this increase must be due to a return of sensitivity due to the vaccine itself. We have not located, and have no reason to suspect the presence of any active tuberculosis in the institution. Again, the percentage of reactors among our controls has not changed sufficiently to suspect any outside source of infection.

This remarkable increase in sensitivity among the vaccinated cases suggests that a further analysis should be made to determine whether the individuals with stronger original reactions are responsible for the increase in sensitivity, rather than the individuals who had original weak reactions.

In Table II is shown the severity of the tuberculin reaction at various periods of observation according to the severity of the original reaction. The total numbers in any subdivision are too small to draw definite conclusions. However, the table does show a tendency to a drop in sensitivity in all individuals, regardless of their original reaction at the end of the year, and then an increase in sensitivity in all individuals at the end of 2 years. This increase is more remarkable in that the total per cent. of reactors and the per cent. positive to .01 mg. are comparable in all cases regardless of their original tuberculin reaction.

Table II.—The behaviour of the tuberculin reaction in vaccinated cases rendered hypersensitive, according to the severity of the original reaction

Original Positive Reaction.	Total Number in Group.	After 6 months observation.					After 12 months observation.					After 18 months observation.					After 24 months observation				
		+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin Negative.
+++ to .01 mg. ..	14	3	2	4	4	1	..	2	2	8	1	1	1	4	4	2	..	3	3	1	2
++ to .01 mg. ..	15	3	2	2	8	..	..	2	2	7	3	..	3	3	5	1	..	2	2	4	..
+ to .01 mg. ..	9	2	1	1	2	3	1	..	..	4	3	..	..	3	..	2	..	..	1	2	1
Positive to 1.0 mg. ..	18	1	2	1	7	7	1	..	..	7	9	1	..	3	3	9	1	2	5	2	5

SUBCUTANEOUS ADMINISTRATION OF HEAT KILLED TUBERCLE BACILLI.

5 of the subcutaneous controls were discharged during 1936, and one of the subcutaneous vaccinated cases. This left 9 of the original subcutaneous vaccinated cases and 8 of their controls still under observation. As stated previously, 4 of the new admissions during 1936, became vaccinated cases in which the vaccine was administered subcutaneously, and 3 became their controls. Therefore the total number in the group of vaccinated cases receiving the vaccine subcutaneously was 13, and their controls 11. The present status of these individuals is shown in Table III.

Table III.—The tuberculin reaction in the vaccinated and control cases at certain periods during the time of observation

Group.	Total Number in Group.	After 3 months observation					After 6 months observation.					After 12 months observation.					After 18 months observation.				
		+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.	+++ to .01 mg.	++ to .01 mg.	+ to .01 mg.	Positive to 1.0 mg.	Tuberculin negative.
Vaccinated ..	13	..	..	1	8	4	1	..	1	3	8	..	..	..	1	7	..	..	..	6	..
Controls ..	11	..	..	..	1	10	..	..	..	..	11	..	..	..	..	6	..	..	..	2	2

As noted in the 1935 report, it will be seen that the degree of sensitivity to tuberculin produced by this method of administration has not beeen great. However, it will be noted that 6 of the vaccinated cases were positive to 1.0 mg. after 18 months observation. This may indicate a return of sensitivity as noted in the previous section of this report.

As pointed out in the previous report, the amount of scarring on all individuals who have received the vaccine intracutaneously is a drawback to its extensive administration. In the Industrial School the boys who received intracutaneous vaccination at the begginning of the study two years ago still show marked, thin depressed scars. Dr. Freund arrived in Jamaica in the early part of January, 1937, to collaborate with us in investigating the possibility of different forms of administration of the vaccine. It is hoped that a method of administration will be found which will produce as efficient results as the intracutaneous method which has been used in the past, without the amount of scarring that has been experienced in the past.

In September, 1936, we found 6 boys negative to 1.0 of O.T. among the new admissions. Dr. Opie gave me permission to try a different method of administration which I had suggested in a memorandum, to Dr. Sawyer. This method consisted in giving four subcutaneous injections of 0.1 mg. of the vaccine and a fifth administration of the same dose intracutaneously. At the end of the year, of the 6 vaccinated cases 3 are tuberculin negative, one was unavailable for retesting, one is now 2-plus to .01 mg., the other 2-plus to 1.0 mg. The amount of scarring in these cases is so far negligible. At the site of the subcutaneous vaccination there are only fairly hard, palpable nodules, varying in size from about .1x.1 x.1 cm. in the tuberculin negative individuals, to about .9 x .3 x .2 cm. in the individual now 2-plus to .01 mg. None of these subcutaneous nodules show evidence of much softening, nor any evidence whatever of skin involvment. The intracutaneous scars vary from about .3 x . 3 x.1 cm., to 1.0 x 1.0 x .3 cm. in the individual 2-plus to .01 mg. Since these individuals will probably gradually increase in sensitivity to tuberculin, it remains to be seen whether the subcutaneous nodules will involve the skin, or the intracutaneous scars gradually increase in size. However, it is the most encouraging method I have used so far to discover a method of administration which will produce sensitivity with a minimum of scarring in the skin. The 5 controls in this series have remained negative to 1.0 mg. during the three-months period.

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